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The Students' Quiz Series.

DISEASES OF CHILDREN.

A MANUAL FOR STUDENTS AND PRACTITIONERS.

BY

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PHILADELPHIA:
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PREFACE.

IN compiling this Compend on the *Diseases of Children* a large number of authors have been consulted, their opinions compared, and of these only such as were regarded as the latest and best have been retained. Among these authorities are—Keating's *Encyclopedia of the Diseases of Children*; J. Lewis Smith, Eustace Smith, Jacobi, Vogel, Meigs and Pepper; on general subjects, Pepper's *System of Medicine*; Reynold's *System of Medicine*; Osler, Loomis, Flint, Watson, Roberts, etc.; Buck's *Reference Handbook of the Medical Sciences*. Among periodicals, *Medical Record*, *New York Medical Journal*, *Archives of Pediatrics*, and *London Lancet* have been consulted.

Credit is due Dr. John Dorning for the excellent articles on Stomatitis and Enuresis.

It is trusted that the student and practitioner will fully appreciate that the intent of this Compend is simply to present a summary of the diseases of children, and therefore its use is recommended only after a careful reading of the standard books from which its subject-matter has been taken.

C. A. R.

1126 PARK AVENUE, }
New York City. }

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DISEASES OF CHILDREN.

GENERAL ANATOMICAL AND PHYSIOLOGICAL CONSIDERATIONS.

Describe the changes in the vascular system at birth.

With the establishment of respiration an increased supply of blood rushes through the pulmonary artery into the lungs, and the placental circulation is cut off.

The foramen ovale closes about the tenth day, a valvular fold rising up on the left side of its margin and above the upper part; this fold becomes adherent to the margin of the foramen, but a permanent opening may remain.

The ductus arteriosus closes from the fourth to the tenth day, forming an impervious cord connecting the pulmonary artery to the concavity of the arch of the aorta.

The umbilical or hypogastric arteries consist of two portions: that from the bladder to the internal iliac remains pervious, as the superior vesical; that from the fundus of the bladder to the umbilicus closes from the second to the fifth day, forming the anterior ligament of the bladder.

The umbilical vein and ductus venosus close from the second to the fifth day, the umbilical vein forming the round ligament to the liver, the ductus venosus existing as a fibrous cord in the fissure of the ductus venosus.

Describe the general condition of the child at birth.

The skin, covered with vernix caseosa, is livid, but changes to a deep red; in a few days it may become yellow, but in about two weeks has the normal pink tinge.

Fine, soft hairs cover the body, but fall out by the third week, and are not replaced; the coarse hair on the scalp is shed by the third or fourth week, and replaced by a softer growth.

The lachrymal and sudoriparous glands are not active until about the third month.

The sebaceous glands secrete early, especially on the scalp.

Subcutaneous fat is abundant, internal fat scanty.

Muscles small and soft, not firm until the sixth month.

Bones contain an excess of organic matter.

Stomach small and vertical; hence easy emesis.

Small intestine at birth nine feet five inches long; grows two feet per month during the first two months.

Large intestine at birth one foot ten inches long; ascending and transverse colons short, descending colon and sigmoid flexure comparatively long; large intestine at one year two feet six inches long.

Liver very large; occupies the greater part of the abdominal cavity.

Pancreas comparatively normal.

Kidneys at birth lobulated; gradually change to the adult form by the close of infancy, but comparatively larger.

Heart small.

Large arteries larger in proportion than in the adult.

Lungs comparatively normal.

Lymphatic system largely developed; the glands numerous and large.

Thymus gland increases from birth to second year; remains stationary till eighth year, then rapidly decreases.

Brain soft, homogeneous, and of uniform color during the first month; after the first month the gray matter appears.

Spinal cord: the centres of motion and circulation are more developed than the centres of sensation.

Testicles: these descend during the ninth month of gestation, and should be in the scrotum at birth.

Describe the various secretions at birth.

Secretions from the mucous membranes commence early.

Saliva is very small in amount till the third or fourth month, and at first from the parotid gland only; the submaxillary gland does not secrete until the third month.

Gastric follicles secrete fluid capable of digesting casein.

Intestinal mucus abundant; intestinal villi large and numerous, but Lieberkühn's and Peyer's glands, though present, are not developed for some months.

Pancreatic fluid is deficient during the first months.

Bile is quite abundant and of a light-brown color.

Urine is secreted before birth; after birth it may be passed in small quantities. It occasionally contains uric acid and urates, depositing a pinkish-red powder in the diapers, and causing fretfulness on voiding.

Meconium is dark brown, almost black, consisting of flat, epithelium-like scales, fine hairs, and fat-globules from the vernix caseosa in the amniotic fluid, and cholesterin crystals, and irregular brown and yellow lumps and flakes.

What is the condition of the blood?

The blood at birth is proportionately less in amount than in the adult: it contains more hæmoglobin and less fibrin; the hæmoglobin decreases up to six months, remains stationary until the sixth year, then increases again; the fibrin rapidly increases. After the first few months the infant has more blood in proportion to its weight than the adult, but it contains less fibrin, albumin, salts, and hæmoglobin, and more white blood-corpuscles, than adult blood.

Describe the pulse and respirations.

The pulse is very rapid at birth; more rapid in the female than male. The average during the first week is—*asleep*, 122; *awake*, 126; *excited*, 148; during the first month—*asleep*, 118; *awake*, 139; *excited*, 152; at six months—*asleep*, 109; *awake*, 127; *excited*, 156; toward close of infancy—*asleep*, 90 to 95; *awake*, 95 to 105.

The respirations are abdominal; average during the first week, 39; from the second month to the second year, 35; from the second year to the tenth year, *asleep*, 18; *awake*, 23.

THE DEVELOPMENT OF THE CHILD.

Describe the development of the child.

The average weight at birth is—*male*, 7 lbs, 11 oz.; *female*, 7 lbs. 4 oz. Weight is lost during the first few days.

The average gain is—during first three months, $4\frac{1}{2}$ oz. per week; from three to six months, 4 oz. per week; from six to nine months, 3 oz. per week; from nine to twelve months, $2\frac{1}{2}$ oz. per week.

The growth is most rapid during the first weeks: during first

year, 6 to 7 or 10 inches; from fourth to sixteenth year, 2 inches per year; from sixteenth to seventeenth year, $1\frac{1}{2}$ inches; from seventeenth to twentieth year, 1 inch per year.

The head is not raised until the sixth to the eighth week.

The child sits erect at from four to seven months; stands alone at from ten to twelve months; and walks at from twelve to fifteen months.

The teeth begin to erupt at six to seven months.

The anterior fontanelle is smallest at birth, increases in size up to the ninth month, remains stationary for two or three months, then decreases, and should be closed by the sixteenth to the eighteenth month.

The first movements are reflex and impulsive.

Suckling is instinctive.

The will-power awakens about the third month, evidenced by the holding of the head erect.

Voluntary grasping commences about the fourth month.

Taste and smell are among the first special senses to appear.

The child takes its food and rejects other things, showing memory and judgment.

Hearing: all children are born deaf; no sound is noticed during the first six hours; the deafness is due to closure of the Eustachian tube, absence of air in the middle ear, and obliquity of the tympanum.

Sight, light, and darkness are appreciated from birth; after six weeks the eyes follow a light, and at three months appreciate objects.

Speech is hereditary and imitative: at first only meaningless sounds are made; gradually the voice is modulated, the vowels are used, and articulate, imitative sounds are made; by the end of the first year single words are spoken, soon two or three words are joined together, and finally complete sentences are formed.

Describe the eruption of the teeth.

The eruption of the teeth begins with those in the lower jaw first, those in the upper jaw quickly following.

Deciduous teeth, twenty in number, ten in each jaw.	{	Central incisors erupt from	6th to 7th month.
		Lateral incisors	" " 7th to 10th "
		Anterior molars	" " 12th to 14th "
		Canines	" " 14th to 20th "
		Posterior molars	" " 18th to 36th "

Permanent teeth, thirty-two in number, sixteen in each jaw.	{	First molars erupt at	6½ years.
		Central incisors	" 7 "
		Lateral incisors	" 8 "
		First bicuspid	" 9 "
		Second bicuspid	" 10 "
		Canines	" 11 to 12 years.
		Second molars	" 12 to 13 "
		Wisdom teeth	" 17 to 25 "

EXAMINATION OF THE CHILD.

Mention the methods of examining a child.

Of the Sleeping Child.—Is the position natural and easy? Is the face flushed or pale, and is the expression natural or painful? Are the lips pale or bluish? Is the skin dry or moist? and is the moisture general or on the head? Is the child quiet, or does it moan, start, twitch, or grind the teeth? Are the nostrils quiet or moving? Are the eyes closed, partly closed, or staring? Count the respirations and pulse, and notice their character. Note the size, shape, and temperature of the head, the appearance of the superficial veins, and whether the fontanelle is opened, closed, pulsating, distended, or retracted. Does the child awake smiling or frowning, pleasant or peevish? Is the face on awakening flushed or pale? Are the pupils dilated, contracted, or unequal? Are there rings around the eyes?

Of the Child Awake.—Have the child entirely stripped. In the healthy child the skin is mottled, smooth, and elastic, the muscles are firm, the arms and legs move freely and continuously, and the child kicks and crows. Is the skin healthy, or are there eruptions? Examine especially the anus. Are the muscles firm or flabby? Do the arms and legs move freely? Are the joints enlarged? Is there snuffling? Count the respirations and note their character: in a healthy child the respiration is abdominal, with no recession of the chest-wall. Note the expression of the face: in cerebral troubles the brow will be knitted and scowling and the eyes rolling, fixed, or staring; in thoracic troubles the alæ nasi will move, there will be a blue circle around the mouth and dark rings under the eyes; in abdominal troubles the corners of the mouth will be drawn down, the lips livid or pale, and the cheeks sunken and pale. Note

the gestures: in cerebral troubles the child puts his hand to his head and pulls at his hair, rolls the head on the pillow and beats the air aimlessly; in abdominal troubles the legs are drawn up, the face is anxious, cheeks sunken, he picks at the bed-clothes; in throat troubles he picks at the throat and puts his hands in his mouth. Note the cry: in cerebral troubles it is sharp, shrill, and solitary; in croup it is hoarse, brassy, metallic, crowing; in laryngeal stenosis it is hoarse and stertorous; in earache it is obstinate and continuous; in pneumonia and capillary bronchitis it is labored and peevish, and attended with a short, suppressed cough; in pleurisy it is a loud, shrill cry, attendant upon coughing; in intestinal troubles and tubercular meningitis it is moaning, wailing; in exhaustion from disease and debility it is faint, weak, and moaning; hunger causes obstinate, continuous crying; constipation causes crying attended with wriggling and writhing. Handle the child: is the head symmetrical? are the fontanelles and sutures normal? is there craniotabes? Is the neck swollen? are the cervical glands enlarged? Is the thorax symmetrical? is there pigeon-breast? is there beading of the ribs? is vocal fremitus normal? is the cardiac impulse diffused or accentuated? Is the abdomen protuberant, flat, or depressed? are the walls resistant or yielding? are any tumors present? can the spleen or liver be felt? is the umbilicus normal? Are the testicles in the scrotum? is there hernia or hydrocele? are there tumors in the groin? are the inguinal glands enlarged? Examine the penis for phimosis, adhesions, and balanitis; the vulva and vagina for atresia, vaginitis, and foreign bodies; the anus for hemorrhoids, polypi, fistulæ, fissures, condylomata, and oxyuris. Is the spine curved? are there protuberances and tender points along the spine? Examine the lungs, using in their order palpation, auscultation, percussion; begin in each case at the back—percuss lightly. Examine the throat. Note the appearance of the tongue: a white fur, with curded spots, indicates dyspepsia and intestinal troubles; a heavy white fur, fever; a yellow fur, liver and stomach troubles of long standing; a brown fur, a low typhoid condition; a red, dry, hot tongue, inflammation of mouth and stomach; a pale flabby tongue, with marks of teeth, debility; aphthæ, neglect, starvation; papillæ white and prominent at tip (strawberry tongue), scarlatina. Take the temperature in the rectum: at birth and for twenty-four hours thereafter the average is 100.4° F.; forty-eight hours after birth it is 98.6° F. In health it falls at night, beginning between 7 and 9 P. M., reaches the

minimum about 2 A. M., then gradually rises to normal. An abnormal temperature indicates disease. A fall toward evening in fevers and inflammations is a good symptom, but if the pulse and other symptoms are aggravated it is unfavorable. Note the frequency and character of the pulse: watch it for at least two minutes. Examine the stools—frequency, color, consistency, constituents, odor, reaction; healthy stools are homogeneous and pasty, unformed, of a light, orange-yellow color, acid reaction, and have a very faint odor of sour milk; they number three to four daily for the first two weeks, two to three daily up to six months, and then about two daily up to one year. Examine the urine: does it stain the diaper, and what color? is there any sediment in the diaper? Note the odor and reaction. Are there any symptoms attending micturition? Examine the expectoration as to color, odor, consistency, tenacity.

CARE AND FEEDING OF THE CHILD.

Describe the general care of children.

The vernix caseosa should have some fat applied to it, when it can be removed with a soft, warm, damp cloth. Then the child can be bathed with warm water and soap.

Every child should be bathed daily. As it grows older a quick cold sponging after the bath is a stimulant to the skin and will protect it against sudden changes of temperature. During the second and third years three or four baths weekly, and after that two or three baths weekly, are sufficient.

At the first dressing the umbilical cord must be protected against being dragged upon, and the chest and abdomen must not be so constricted as to impede respiration. The body-clothing should consist of light, soft wool. The clothing should not be too heavy; the legs and arms must be given as much freedom as possible. The binder is not necessary after the cord sloughs. As the child grows the clothing should be warm, but not cumbersome. When the child walks the shoes should be long with broad soles.

Children born in summer should go outdoors during the second or third week; those born in winter, not until they are two or two and a half months, and then at noonday. Older children cannot

go outdoors too much; on bright sunny days they should spend the whole day in the open air.

A child should spend the first eight days in a darkened room; after two weeks its eyes can stand the light.

The nursery should be bright and sunny, with plenty of windows, a southern exposure if possible; well ventilated, warmed by an open fireplace; containing no water-pipes or sewer connections; the floor painted or covered with linoleum and rugs; no cooking should be done in the room, and it should be thoroughly aired for one or two hours each morning. The child's bed should be in the middle of the room.

Describe infant feeding.

The child should be put to the breast as soon after it is born as the mother's condition will permit. Milk does not appear in the human breast until about forty-eight hours, but the colostrum will satisfy the child and assist in the removal of the meconium. The nursings should be regular from the start—not oftener than every two hours during the first three months, two hours and a half during the second three months, and after six months the intervals should be lengthened to three hours. The child should not sleep in the bed with its mother, nor suckle as it pleases during the night; the mother should nurse it at her bed-hour, again about 2 or 3 A. M., and at daylight. The child should receive no other food but breast-milk until it is twelve to fourteen months old. Weaning should not occur in hot weather. The child should nurse alternately on the two breasts. It should nurse until it falls asleep.

At first the child takes but a couple of drachms at each nursing, but the quantity steadily increases, until at six months it takes two to two and a half ounces each time. It should receive water to drink.

Menstruation and pregnancy are not indications for weaning. If the mother's milk fails, improve her dietary: milk, malt liquors, electricity, poultices of castor-oil leaves, etc. are recommended as galactagogues. Next to the mother's milk comes that of the wet-nurse. The preferable age is between twenty and thirty; the choice between a blonde and brunette cannot always be made, but if possible choose a woman of a happy, bright disposition. The age of the milk is not of so much importance as the quality and quantity: to obtain this empty the breasts, and have the woman return in two or three hours: repeat the operation and compare the two results.

Examine the wet-nurse thoroughly, especially the pharynx and genitals; reject one with syphilis or tuberculosis; take only a healthy woman with a clear, healthy skin. Examine her child if it be possible. The moral influence of the wet-nurse in the family must be considered: wet-nurses have separated husbands and wives. Do not allow the wet-nurse to be pampered; she must have plain, wholesome food, a daily bath, outdoor exercise, no excitement, a healthy, cheerful sleeping-room.

If human milk is not obtainable, the milk of some one of the domestic animals should be used, that of the ass, goat, or cow. The former is nearest in its resemblance to human milk, but the last is most easily obtained. The milk from a dairy is preferable to the milk from a single cow, unless that cow is positively free from tuberculosis. The milk of the common red cow is better than that of the Jersey or Alderney, as that of these latter is too rich.

The comparative analysis of human and cow's milk, according to Vernois and Becquerel, give—

	Human Milk.	Cow's Milk.
Specific gravity	1.032	1.033
Water in 100 parts	88.91	86.41
Sugar " "	4.36	3.80
Butter " "	2.67	3.61
Casein and extractives	3.92	5.51
Salts " "13	.66
Reaction.	alkaline.	acid.

The excess of casein in cow's milk requires that the milk shall be modified so as to resemble human milk and become more easy of digestion by the infant. To accomplish this object numerous formulæ have been suggested. Those of Meigs and Rotch seem to come nearest to meeting the indications. These indications are the reduction of the percentage of casein by adding water; this reduces all the other constituents. The percentage of butter is restored by adding cream, that of the sugar by adding sugar of milk, and the acidity is corrected by adding lime-water.

Meigs's formula is—milk 1 part, cream 2 parts, lime-water 2 parts, sugar-water 3 parts: the sugar-water consists of $\frac{3}{17\frac{1}{2}}$ of milk-sugar to 1 pint of water.

Rotch's formula is—milk $\frac{3}{4}$, centrifugal cream $\frac{3}{8}$ ss, lime-water $\frac{3}{8}$ ss, boiled water $\frac{3}{4}$ v, milk-sugar 1 measure ($\frac{3}{8}$).

Leeds's formula is—milk and water each 1 gill, rich cream 2 table-

spoons, milk-sugar 200 grs., extractum pancreaticum $1\frac{1}{2}$ gr., sodium bicarbonate 4 gr.: this is put in the nursing-bottle and stood for twenty minutes in water having a temperature of 115° to 125° F.; feed at once.

Numerous and various attenuants are used: gelatin, arrow-root, barley, oatmeal, rice-paste, baked flour, cracker-dust, flour-ball, etc.

Condensed milk is recommended by some, in the proportions of 1 part milk to 15 parts water in early infancy, later 1 to 10; the canned milk should not be used, as it contains cane-sugar.

Patent baby-foods are proprietary articles, hence secret; they are likely to be old and musty and are always expensive.

Sterilizing the milk destroys the bacteria and so prevents the formation of ptomaines and fermentation; it is claimed that a temperature of 212° F. devitalizes the milk, while a temperature of 167° F. protects the milk without devitalizing it.

The nursing-bottle should hold eight ounces, and the rubber nipple should fit directly over the mouth of the bottle; there should be no tube. At least six bottles should be provided, and these should be boiled daily for one hour; the nipples should be turned and washed after using, and kept in a solution of bicarbonate of soda.

Weaning should be commenced at twelve to fourteen months, and should be gradual. One nursing each day is omitted, and other food substituted, until the day nursing is entirely stopped, and then the night nursing should be given up.

Milk should be the principal article of food during infancy and early childhood; it should be drunk at each meal, and fed in puddings, custards, with the different cereals, farinacea, bread, and crackers. In addition, soft boiled eggs, baked potatoes, cooked fruits, meat broths, meat gravy, and an abundance of butter may be allowed.

DISEASES OF CHILDREN.

DISEASES OF THE NEW-BORN.

ASPHYXIA NEONATORUM.

Define asphyxia neonatorum.

It is that condition of the new-born in which the inspiratory muscles fail to contract or else imperfectly contract, so that breathing does not commence.

Give some of the causes.

Twisting of the umbilical cord around the child's neck ; compression of the cord between the child and its mother's pelvis ; early detachment of the placenta ; injury to the skull ; plugging of air-passages with blood or mucus ; feeble parents ; exhausting diseases of mother ; early delivery ; compression of large blood-vessels of neck, producing the apoplectic form.

What are the post-mortem conditions ?

The chief lesions are extravasations of blood between the meninges or into the brain.

Describe the symptoms.

The cardiac pulsations continue, though the child does not breathe. There are two varieties of asphyxia : in one the child is cyanotic, with a thick blue tongue protruding from the mouth and projecting eyeballs ; in the other the child is pale and limp ; the extremities hang down and the lower jaw drops ; the cardiac pulsations are very feeble ; the respirations, if present, are short and spasmodic ; the sphincters are relaxed. The respirations and heart-beats grow feebler, and usually death follows in a few hours.

What is the prognosis ?

Grave : unless speedy and proper assistance is instituted, life will cease in a few hours.

Give the treatment.

Cleanse the mouth; induce coughing by tickling the epiglottis; irritate the skin by dipping the child alternately in hot and cold water, also by slapping the buttocks, and by pouring upon the skin brandy, ether, vinegar, or cologne. If the child is cyanosed, allow some blood to escape from the funis. Inflation of air by means of a catheter passed into the trachea; electricity. Place the child on its right side with the upper half of the body elevated. Artificial respiration. Persevere as long as the heart beats. It may take from one to three hours to restore the child.

ATELECTASIS PULMONUM.**Define atelectasis pulmonum.**

It is that condition of the child's lungs after birth in which the alveoli remain collapsed and airless, as in the foetal state.

What are the causes of this condition?

Asphyxia; premature and feeble children; too rapid deliveries; inhalation of too cold air.

What is the morbid anatomy?

Scattered through the lungs, but mostly at the bases posteriorly, are bluish-red, compact spots, which do not crepitate, and sink in water; the cut surfaces are smooth, regular, and not granular. These atelectatic spots generally affect the lobules; rarely is an entire lung or even a lobe involved. The spots can be inflated, differentiating them from lobular pneumonia.

Give the symptoms.

The child is born asphyxiated or breathes superficially from its birth; its cry is weak and moaning; it cannot nurse continuously; it may be cyanotic or have a pale, cool skin; it will sleep much; the pupils, slightly dilated, act slowly; the pulse is feeble and slow. Percussion is not abnormal unless the atelectasis is very extensive; crepitant râles may be heard, but rarely bronchial breathing. After a few days spasmodic contractions of the facial muscles occur, followed by general convulsions; the respiratory efforts grow feebler; the child's skin gets cooler; and death occurs by degrees or else suddenly in a convulsive seizure.

Give the treatment.

Cause every child at birth to cry loudly and continuously.

If atelectasis develops, keep the child in a room of uniform temperature, warmly clothed, and surrounded with hot bottles; change the position frequently; have the child nurse frequently; make it cry and vomit: artificial respiration can be tried.

CEPHALÆMATOMA.

Define cephalæmatoma.

Cephalæmatoma is a soft, painless, fluctuating tumor upon the scalp, due to an extravasation of blood between the pericranium and bone.

Give the etiology.

Pressure of the dilated os uteri upon the scalp, producing ecchymosis; injury during delivery; protracted labor, producing caput succedaneum; thinness and friability of the cranial vessels.

What are the symptoms?

The child is generally born with a caput succedaneum: after this disappears a swelling remains for about six days, and as this subsides a tumor will be found, generally on the right parietal bone, the size of an apple. It is never located over a suture. After a few days a bony ring forms at the margin of the tumor between the periosteum and the bone, and bone is deposited upon the surface of the pericranium facing the extravasation; this ridge of bone can be felt by the finger, as can also the thickening of the wall of the tumor. The tumor gradually becomes harder and flatter, and in from three to six months but slight inequality is noticed, and the scalp is perfectly movable.

From what conditions should it be distinguished?

From caput succedaneum: this generally lasts but twelve to twenty-four hours, pits on pressure, and does not fluctuate. From hernia cerebri congenita: this appears in the sutures and fontanelles, bulges when the child cries, and induces convulsions. From vascular tumors: these rarely occur on the scalp, do not fluctuate, and have no bony ring.

What is the prognosis?

Good, except where a true cephalæmatoma is complicated with an extravasation of blood upon the internal surface of the skull; which condition is followed by convulsions, paralysis, and death.

Give the treatment.

The *treatment* should be expectant: if the tumor is left to itself, and not interfered with, its contents will be absorbed in from three to six months, causing no pain or inconvenience to the child.

DISEASES OF THE NAVEL.**Describe inflammation of the umbilical vessels.**

The gelatinous substance around the vessels beneath the abdominal muscles becomes purulent and decomposed, and pressure around the navel causes a few drops of serum or sero-pus to appear. There are generally a rise of temperature and restlessness from the pain and inflammation. This pus may be absorbed, producing pyæmia, or erysipelas of the abdominal walls may occur; in this case death occurs in a few days. If the pus is not absorbed, the discharge ceases and the navel heals after some weeks.

What is the treatment?

Cleanliness, syringing the parts frequently with warm water, preventing the formation of crusts, removing the child from the infected room, feeding the child by a wet-nurse or artificially; check diarrhœa if any exists.

Describe blennorrhœa and ulceration of the navel.

A mucous discharge exudes from the navel, due to lack of cleanliness or maltreatment. If this condition continues, the surrounding abdomen becomes excoriated, inflamed, and ulcerated; the ulcer may perforate, causing peritonitis and death.

Give the treatment.

Compresses of solutions of lead or silver nitrate will often arrest the trouble at the commencement. Look after the child's digestion.

Describe gangrene of the navel.

Gangrene generally follows inflammation or ulceration of the navel. The part is converted into a grayish-brown slough; the surrounding skin becomes loose, peels off, exposing the tissues beneath, of a bluish color; bloody serum exudes; peritonitis and sometimes perforation of the intestine, with escape of fæces, bring the case to a fatal termination. In some rare cases the gangrene becomes circumscribed, the slough separates, and healthy granulations heal the wound.

Give the treatment.

Strict cleanliness, and chlorine-water or myrrh as a deodorizer. A wet-nurse or artificial feeding, and support the patient with wine.

Describe ulceration of the navel.

Ulceration of the navel is a pediculated excrescence which sometimes appears after the cord has separated and before the cicatrix has formed, and interferes with its forming. As a result of this the surrounding skin becomes excoriated and gangrene may supervene.

In the *treatment* the excoriations should be cleansed, and healed with lead-water compresses, and the stump removed by excision or ligation; any resulting hemorrhage can be checked by silver nitrate.

Describe hemorrhage of the navel.

A very rare accident, generally indicative of a hemorrhagic diathesis. After the cord sloughs off blood oozes, drop by drop, from the navel; it coagulates slowly; the child becomes anæmic; petechiæ appear, and will be found on the pleuræ and pericardium. It is usually fatal.

In the *treatment* hæmostatics are of no service. Transfixing the wound with two needles and a figure-of-eight ligature may be tried, or filling the wound with a solution of plaster of Paris.

Describe congenital rupture of the navel, and give synonyms.

Exomphalus; Omphalocele congenita; Rupture of the umbilical cord. It is a protrusion at the navel of a portion of the intestine or of the liver, or both, due to a lack of development of the abdominal walls during intra-uterine life. If the hernia contains intestine alone, as a rule it cannot be reduced, and is followed by gangrene, peritonitis, and death; but if it contain intestine and liver, the liver by its density prevents constriction of the intestine; hence it may be returned and recovery ensue; also if it contain liver alone, it can be reduced.

The *treatment* consists in reducing the hernia if possible, protecting the navel with lint covered with some simple ointment, and nourishing the child.

Describe acquired rupture of the navel, and give synonyms.

Hernia umbilicalis; Omphalocele acquisita; Rupture of the umbilical ring. This condition generally occurs some weeks or

months after the cord has sloughed off. It is found mostly in thin children or those suffering from flatulence or some intercurrent disease which puts a strain upon the abdominal walls, as obstipatio or pertussis. The umbilical ring is stretched, and a knuckle of small intestine, covered with peritoneum, slips through the opening, distending the skin at the umbilicus into a white, glistening tumor of variable size.

The *treatment* consists in reducing the hernia and retaining the bowel in the abdomen by means of a properly fitting truss or a compress and strip of plaster.

TRISMUS AND TETANUS OF THE NEW-BORN.

Define trismus and tetanus of the new-born, and give synonyms.

Trismus nascentium; Trismus neonatorum; Nine-day fits; Lock-jaw. A condition of spastic closure of the lower jaw and rigidity of the entire body.

What are the causes?

It is endemic in certain localities, as in some parts of the tropics, and sometimes epidemic in institutions. It is supposed to be due to some septic poison, pressure upon the medulla, uræmia, exposure to change of temperature, injury to a nerve as the cicatrix forms at the umbilicus, inflammation of the umbilical vessels.

Describe the symptoms.

At some time during the first five days after the cord sloughs off the child becomes restless, starts in its sleep, cries, wants to nurse, but abandons the breast immediately. In a few hours it is unable to open its mouth, the muscles of mastication become rigid, the lips are compressed, the brow and cheeks wrinkled, the eyes closed and surrounded by bluish rings, the head retracted, the skin turgid, and it is unable to swallow. These symptoms may temporarily abate. Then the muscles get more rigid, other groups are involved, sometimes the entire body becomes stiff, and death follows in from one to eight days from suffocation or exhaustion.

Give the treatment.

Prophylaxis is the best *treatment*: use every care with the cord and remove every suspicious element. If the disease develops, support the patient, treat the navel antiseptically, prevent or correct the convulsions by narcotics and antispasmodics, as opium, chloral, etc.

SCLEROMA.**Define scleroma, and give synonyms.**

Edema neonatorum; Induratio telæ cellulossæ; Induration of the cellular tissue. It consists of a hardening of the integument during the first weeks of infancy.

Give the etiology.

The *causes* are obscure. In most cases it is associated with pneumonia or some derangement of the circulatory apparatus. It occurs mostly in premature children or those who are poorly nourished, and in the winter.

Give the symptoms.

The disease begins on the calves of the legs, which become swollen, hard, and stiff, with increase of redness and decrease of temperature. The swelling extends to the feet and upward upon the thighs, abdomen, skipping the thorax, to the face and arms. The redness soon fades to a yellowish tinge; the skin becomes dry, but is not exfoliated, and the surface is deathly cold. At the commencement the skin is movable and œdematous, but later these signs disappear. The temperature is very low (93° F.), respirations are slow, voice and cry weak; the action of the heart is feeble, second sound almost lost, pulse small and slow; the bowels and bladder are torpid; suckling is difficult; cutaneous sensation is lost; and finally death results from exhaustion, attended by a flow of bloody serum from the mouth and nose. If recovery takes place, the respirations are the first to improve; they become deeper and easier; the heart's action gets stronger; the appetite increases; and the œdema clears up, beginning first at the face. The swelling of the legs and feet is the last to disappear; it will remain here for some time after the other parts are normal. As long as the feet are swollen there is danger. The redness and the wrinkled condition of the skin remain for some time.

What changes are found post-mortem?

The changes are chiefly in the skin and connective tissue: the other organs are not generally affected. Lobular pneumonia may be present, and there may be serous fluid in the pleura and peritoneum. The changes in the skin are œdematous; the part is blue and hard; upon section black, semifluid blood flows from the skin, and from the cellular tissue a yellow, serous fluid resembling

dropsical fluid. The parts become soft after the escape of this fluid.

Give the treatment.

Stimulate the child, nourish him as thoroughly as possible, and keep the body temperature elevated by artificial heat.

MELÆNA NEONATORUM.

Define melæna neonatorum.

Melæna neonatorum is hemorrhage from the stomach and bowels during the first few days of infant life.

What are the causes?

Hæmophilia, perforating gastric or duodenal ulcer, thinness of the walls of the mesenteric arteries and their branches, causing rupture from the turgescence of these vessels, due to the sudden closure of the umbilical arteries.

Describe the symptoms.

Between the first and third days of life the child vomits blood and passes bloody stools, either fluid or lumpy (coagulated). Collapse rapidly supervenes, with blue, cold skin, flickering pulse, and all the symptoms of profound anæmia. About 50 per cent. recover. After death the stomach and intestines are filled with clot-
ted blood, while the tissues and organs are blanched.

What is the treatment?

Ice milk and cold applications to abdomen (Rilliet), or artificial heat to draw the blood to the surface; support and nourish the child; hæmostatics.

ICTERUS NEONATORUM.

Describe icterus neonatorum.

Icterus neonatorum is due to the retention of the coloring matter of the bile in the blood, and thereby results the staining of all the tissues—bones, muscles, skin, conjunctivæ. Pus, if present, and the urine partake of this staining, but the fæces are not changed, but retain their yellowish or greenish tint. Slight fever is present, and the healing of the navel will be delayed.

True icterus, which is usually fatal, is due to inflammation of the umbilical or portal vein and to small abscesses in the liver.

These cases progress rapidly, become atrophied, and die from diarrhoea.

Simple icterus is due to a catarrhal duodenitis or occlusion of the bile-ducts; it lasts but a few days, produces no disturbance of the system, and tends to recovery.

Treatment of the pernicious variety will avail nothing. The milder form will recover if the digestion and bowels are kept in order.

CONJUNCTIVITIS NEONATORUM.

Define conjunctivitis neonatorum.

A purulent inflammation of the conjunctiva, with effusion of plastic exudate into the parenchyma, coming on soon after birth. It may involve one or both eyes. The pus is intensely contagious. Two varieties are recognized.

What are the causes?

Infection from blennorrhœic vaginal mucus during delivery or contagion in institutions where the disease is epidemic.

Describe the two varieties.

The **first variety** runs a rapid and aggravated course. It has *three grades*: In the *first* there are redness and swelling of the lids, with secretion of more or less pus, which soon changes to a thin serous discharge containing flakes and fibres. In the *second* grade the redness and swelling are more intense, and the ocular conjunctiva becomes involved; the discharge is thin and excoriates the skin. In the *third* grade the conditions are still more aggravated: the swelling and excoriation of the skin extend; the pus is more profuse, sometimes mixed with blood; the ocular conjunctiva becomes infiltrated, surrounding the cornea with a red ring.

The **second variety** is more chronic and attended with less discharge. It has *two grades*: In the *first* there are slight inflammation and a discharge, slight roughening of the conjunctiva, and photophobia. In the *second* the palpebral conjunctiva is studded with small warty growths, which bleed easily and may continue for months if not treated. Toward the orbital border they develop into large cockscomb granulations.

The disease does not always run through all three degrees; it may stop at the second or even the first. It may be slow, or so rapid that in twenty-four hours the eyes are destroyed. If it stops

at the first stage, no serious results follow. If at the second, the disease will be more chronic, the discharge and the enlarged papillæ lasting for some months, followed by deformities and enlargement of the lids. In this stage small ulcers may develop on the cornea. The third is always dangerous; the cornea becomes involved, the ulceration commencing at the centre and having a tendency to perforate, causing prolapsus of the iris and destruction of the eye.

What is the prognosis?

This depends upon the condition of the cornea: the later that becomes involved, the more hopeful is the case, though the condition is always serious.

Give the treatment.

Cleanliness at the time of delivery, the vaginal douche, and carefully washing the eyes and face as soon as the head is born, using plain warm water, or, if there is any suspicion of infection, a solution of silver nitrate (gr. j to an ounce of water). If the disease develops in only one eye, protect the sound one. Keep the diseased eye clean, and use as collyria solutions of silver nitrate (gr. j to the ounce), corrosive sublimate (gr. ss to the ounce), zinc sulphate (gr. j to the ounce), boracic acid (1 to 2 per cent.). Many cases recover spontaneously.

MASTITIS NEONATORUM.

Describe mastitis neonatorum.

The breasts of many children at birth contain a small quantity of thin milk. With boys this disappears in a couple of weeks, but with girls its presence is continuous. Any injury to the gland during delivery, or bruising the gland and squeezing out the milk (an unnecessary procedure), starts an inflammation that produces redness, swelling, pain, and, in some cases, suppuration. After the abscess bursts the gland remains indurated for a few weeks, then returns to its normal condition. Some extreme cases assume an erysipelatous condition, with deep ulceration and sinuses that may destroy the gland.

In the *treatment* prevent the inflammation if possible: if, however, the breasts swell, anoint them with olive oil and cover with a dressing of thin muslin and cotton-wool; if pus forms, use poul-

tices to hasten the suppuration, and make incision early, avoiding the nipple and the lacteal ducts.

HARE-LIP AND CLEFT PALATE.

Define hare-lip and cleft palate, and give the synonyms.

Labium leporinum and *palatum fissum*. Hare-lip is a congenital splitting of the upper lip; cleft palate is a congenital fissure of the hard palate.

Describe the causes and effects of these deformities.

The *causes* are arrest of development during foetal life. The upper lip is formed from two lateral and one central portion: if these fail to unite, hare-lip occurs on one or both sides, never in the centre of the lip, and the fissure generally extends into the corresponding nostril.

The hard palate is formed from the two superior maxillary bones: if these fail to unite, cleft palate results. The effects are: difficult suckling, particularly in cleft palate; the nipple cannot be properly grasped, and the milk will escape through the nose; obliquity of the position of the teeth as they erupt; and indistinct speech.

What is the treatment?

The *treatment* is surgical. If the child can get no nourishment, and is consequently losing ground, the operation should be done at once. But if the child is strong and thriving, the operation can be delayed for a few months, but not longer than six months, because of the eruption of the teeth and the increased activity of the child jeopardizing the dressings. Freshen the edges, and in hare-lip use the hare-lip pins and figure-of-eight ligature; in cleft palate use the continuous deep suture, but do not draw this too tight or it will interfere with the exudation of plastic material. A scar always results.

CONSTRICTION OF THE MOUTH.

Describe constriction of the mouth.

Synonym.—*Microstoma*.

Some children are born with very small mouths or without any opening. In these cases an operation is at once demanded. But constriction of the mouth is most frequently due to syphilis, the cicatrices resulting from the healing of the mucous patches causing the constriction.

The *treatment* pertains first to the eradication of the syphilis, then an operation upon the mouth. From each corner of the mouth remove a piece of skin, myrtle-leaf-shaped, cut through the mucous membrane, turn it over upon the raw surfaces, and stitch the edges together.

DEFORMITIES OF THE TONGUE.

Describe the most common deformities of the tongue, and give the treatment.

Defectus linguæ, imperfect development of the tongue: The tongue may be indented, fissured, or divided into two distinct portions. Except in extreme cases no interference is necessary.

Prolapsus linguæ, hypertrophy and prolapse of the tongue: The tongue may be so enlarged as to completely fill the mouth and protrude between the lips, interfering with suckling, and later with speech. The teeth erupt irregularly, the saliva accumulates and decomposes, ulceration of the mucous membrane results.

The *treatment* is by astringents, as alum; or amputation.

Adhæsió linguæ, abnormal adhesions of the tongue: This may consist of a short frænum or the under surface of the tongue may be adherent to the floor of the mouth. The results are interference with suckling, and later with speech.

The *treatment* for short frænum, or tongue-tie, is to snip the mucous membrane with scissors and tear the tongue loose with the finger-nail. Where the tongue is attached to the floor of the mouth, the operation is long, tedious, and bloody, and not always successful.

Ranula is a mucous cyst situated by the side of the frænum linguæ. Its size varies. It may be so large as to press the tongue against the hard palate and so interfere with nursing and breathing. Its growth is gradual. It may be single or multiple.

The *treatment* consists in snipping off the top of the tumor, emptying the sac, and cauterizing the interior with the solid stick of silver nitrate.

ORGANIC DISEASES.

STOMATITIS.

Give the synonyms of catarrhal stomatitis.

Simple stomatitis; Erythematous stomatitis.

Define catarrhal stomatitis.

A non-ulcerative or non-exudative inflammation, of varying intensity, of the mucous membrane of the mouth.

Mention its causes.

Irritants taken into the mouth, as too hot fluids, dirty teething-rings, sugar-teats, or substances the child may pick up from the floor, the abuse of mercury, digestive disturbances, scarlatina, measles.

Give its morbid anatomy.

Hyperæmia and swelling of the mucous membrane of the mouth, with increased secretion from the mucous and salivary glands.

What are the symptoms of catarrhal stomatitis.

Abnormal heat, redness, and swelling of the buccal mucous membrane, with at first dryness, but later a profuse secretion from the mouth; slight elevation of temperature; restlessness and pain, particularly when anything is introduced into the mouth. In severe cases children refuse food.

Give the prognosis of catarrhal stomatitis.

Good. Duration will depend upon cause.

How should it be treated?

Remove existing cause; attention to hygiene and diet; correct digestive secretions; mild antiseptic mouth-wash, boric acid or borax; chlorate of potassium locally and internally.

Give the synonyms of follicular stomatitis.

Aphthous stomatitis; Vesicular stomatitis; Croupous stomatitis; Aphthæ.

Define follicular stomatitis.

A form of stomatitis resulting in the formation of small and characteristic ulcers, running an acute course and tending to recovery.

Give the etiology of follicular stomatitis.

Said to be caused by gastro-intestinal derangements, cold, irritation of objects placed in the mouth. Real nature of the malady not known: thought by some to be an infectious disease; by others, a mere herpetic eruption and dependent upon the causes that produce herpes.

Give the morbid anatomy of follicular stomatitis.

On the inner surface of the cheeks or lips or the edges of the tongue, but never on the gums, appear pearly-gray vesicles, vary-

ing from six to twelve in number, and about the size of a large pin's head, which are filled with a fibrinous exudate. By rupture of the vesicle or by friction the exudate is removed, leaving a small ulcer with a grayish-yellow surface, which heals in a few days. Several ulcers may coalesce.

What are the symptoms ?

Varying in degree with the intensity of the malady: they are slight fever, furred tongue, pain in the mouth, especially on taking food, increased flow of buccal secretions, and in some cases slightly disagreeable odor to the breath. (See *Morbid Anatomy*.)

Give prognosis of follicular stomatitis.

Good. When improperly managed may go on to ulcerative stomatitis.

Give its treatment.

Attention to diet and general condition of patient; mouth should be kept clean; chlorate of potassium internally.

What are the synonyms of ulcerative stomatitis ?

Stomatitis ulcerosa; Stomacace; Putrid sore mouth; Mundfaule.

Define ulcerative stomatitis.

A form of inflammation of the buccal mucous membrane, resulting in extensive ulceration, particularly of the gums, and accompanied with foetor of the breath.

What is its etiology ?

Most common between the second and seventh year. May be communicated by direct contact. Caused by abuse of mercury, diseased teeth, improper food, bad hygiene, or by any exhausting disease, notably measles.

Give the morbid anatomy of ulcerative stomatitis.

Usually not observed prior to the ulcerative stage. The process involves the gums, contiguous surfaces of the lips, cheeks, and edges of the tongue. The dorsum of the tongue and palate generally escape. The mucous membrane is swollen and of a red or deep livid hue. Ulceration begins along the dental edge of the gum, and may involve the whole gum, laying bare the teeth and part of the cheek. The ulcer presents a grayish or yellowish-gray appearance and irregular outline, and bleeds at the slightest touch. Microscopic examination of the ulcer shows a necrosis of the tissues

extending to variable depths below the surface, with infiltration of leucocytes, indistinctness of normal tissue-elements, and swarms of micrococci and other bacteria. The cervical lymphatic glands in the affected sides are often swollen.

What are the symptoms?

Pain and tenderness of the mouth to a degree to interfere with the patient's taking sufficient nourishment; excessive flow of the buccal secretions, which are irritating, with intensely fœtid odor; occasional bleeding from mouth. In some cases there is general constitutional disturbance with moderate elevation of temperature.

What is the prognosis of ulcerative stomatitis?

It is not of itself a fatal disease, although death may occur from the condition which has favored its occurrence. The affection may persist for months.

Give the treatment of ulcerative stomatitis.

Proper attention to the general hygiene and nutrition of the patient, with the most scrupulous cleanliness of the mouth. Use as mouth-washes: carbolic acid (5 gr. to the ounce), boric acid (10 to 15 gr. to the ounce), permanganate of potassium, peroxide of hydrogen (1 part to 4 or 6 of water). When there is much bleeding astringent solutions should be used. The parts may be painted with a 4 per cent. solution of cocaine when painful enough to prevent the taking of food. Internally, chlorate of potassium acts almost as a specific if given in large but safe doses.

Define cancrum oris.

It is a rapidly progressive gangrene of the cheek or gum. It occurs rather infrequently and is usually secondary. Recovery, which is rare, is accompanied by loss of tissue which is permanent.

What are its synonyms?

Noma; Gangrene of the mouth; Gangræna oris; Oral gangrene; Wangenbrand; Gangrenous stomatitis.

Give the etiology of cancrum oris.

It is most prevalent between the ages of two and five years, and occurs most frequently in females. It occurs also in children whose vitality has been reduced in consequence of unhygienic surroundings or some severe constitutional disease, as scarlatina, measles, dysentery, etc.

Describe its morbid anatomy.

The mucous membrane on the inner surface of the cheek first presents a sloughing ulcer, followed by a brawny induration of the tissues of the cheek. This induration, extending to the skin, gives rise to a livid, glazed appearance of the integument, which later becomes black, and perforation of the cheek ensues. This sloughing process may extend and involve the whole side of the face and the bones of the jaws. The nerves generally escape destruction. The blood-vessels are filled with thrombi early in the disease, and hemorrhage is quite exceptional. Lingard has discovered in cases of noma a thread-like bacillus; Sansom has described refractile, pseudo-crystalline, motile bodies in the blood; Wharton mentions a case in which there was extensive colitis. Pneumonia, pleurisy, purulent pericarditis, peritonitis, gangrene of the lungs, skin, genitals, or extremities may coexist with noma.

Give the symptoms of cancrum oris.

At first the temperature elevation is not marked, but may rise to 103° or 104° F. later on, in consequence of septic absorption. In mild cases the degree of prostration is not marked. In severe cases the constitutional disturbance is great, the pulse rapid, and the prostration extreme, death taking place in from ten to fourteen days. There is an extremely pungent, fetid odor from the mouth, which becomes more pronounced as the disease progresses. The flow of the buccal secretion is increased, and soon becomes thick and sanious. Diarrhœa is of frequent occurrence. When recovery takes place the edges of the wound, after separation of the slough, begin to show granulations, and healing takes place with much cicatricial deformity.

What is the prognosis?

About 75 per cent. of the cases terminate fatally.

Give the treatment of cancrum oris.

Support patient's strength with nutritious food, stimulants, and tonics. Locally, the actual cautery, fuming nitric acid, bromine, chloride of zinc, etc. to destroy the gangrenous process; sub-nitrate of bismuth dusted over the parts; antiseptic lotions to overcome fœtor, as solutions of carbolic acid, chlorinated soda, eucalyptol, terebene, or of Condy's fluid. Internally, chlorate of potassium in large doses.

Define parasitic stomatitis.

An affection of the mucous membrane of the mouth, characterized by the development of certain fungi, and associated with a previously unhealthy state of its lining membrane.

What are the synonyms of parasitic stomatitis?

Thrush; Sprue; White mouth.

Give the etiology of parasitic stomatitis.

This affection, although most commonly observed in young children, may occur at any age in the later stages of some protracted illness, as tuberculosis, diabetes, etc. It is dependent upon a fungus, the *saccharomyces albicans* or *oidium albicans* (Robin), a member of the order of *Saccharomycetæ*, or yeast fungi. It consists of mycelium-like filaments, from the ends of which spring spherical or ovoid torula-cells. The disease does not occur on a healthy mucous membrane. The use of an improper diet, uncleanness of the mouth, the acid fermentation of particles of food, or the development of a catarrhal stomatitis predisposes to the affection. The spores are conveyed to the mouth by means of dirty nipples, sugar-teats, etc., and perhaps through the atmosphere. The fungus develops in the superficial layers of the mucous membrane. The affection appears as small pearly-white spots that soon coalesce: appears at first on the dorsum of the tongue, and may spread to the rest of the entire mouth, and perhaps extend to the stomach and intestines (Parrot). The patches may be removed, leaving the mucous surface intact; usually, however, there is some catarrhal stomatitis.

What are the symptoms of parasitic stomatitis?

There are no *symptoms per se*. The symptoms generally attributed to it are those of the accompanying disorder. They may be those of catarrhal stomatitis. There is usually evidence of malnutrition, with diarrhoea. The stools are acid and irritating, and cause an erythema of the buttocks (intertrigo).

Give the treatment of parasitic stomatitis.

Attention to the hygiene and diet of the patient, cleanliness of nursing-bottles, nipples, etc. Locally, borax or sulphite of sodium (a drachm to the ounce of water).

PITYRIASIS LINGUÆ.**Describe pityriasis linguæ.**

A white-coated tongue is found in all children during the first weeks of life, entirely independent of any digestive disturbance. The tongue also becomes coated in affections of the mouth, throat, and digestive tract, acute diseases, and febrile disturbances; but a thickly-coated tongue is very rare in children. Pityriasis linguæ consists of white spots, of varying sizes and shapes, scattered irregularly over the dorsum of the tongue, with normal tissue between. This condition may last for months and produce no disturbance of the system. It is due to a change in the epithelium.

The *treatment* should take into consideration the diet, the condition of the bowels, and the cleanliness of the mouth.

PAROTIS.**Define parotitis.**

Parotitis is an hypertrophy of the parotid gland, and may be benign or malignant. The benign variety develops slowly as a rule, the skin over the swelling is movable, and the pain is very slight, if any. Fibroid, cystic, or adipose tumors may develop in the gland. The malignant variety consists of fibroid or medullary carcinoma in the parenchyma of the gland, but secondary to the disease in other organs. As the disease progresses the tumor produces pressure upon the neighboring vessels and organs. The mass is immovable and hard in the fibroid, soft in the medullary variety.

Give the treatment.

Simple hypertrophy of the gland can be reduced by iodine; cystic and adipose tumors require the knife. The malignant variety requires the general treatment for cancer in the adult.

TONSILLITIS.**Give the definition of tonsillitis.**

An acute inflammation of one or both tonsils.

What are the varieties of tonsillitis?

Catarrhal, follicular, parenchymatous or suppurative, and rheumatic.

Give some of the causes of tonsillitis.

Predisposing causes: hereditary, rheumatism, syphilis, scrofula, previous attacks, atmospheric changes, lowered vitality. Direct

causes: taking cold, acute febrile diseases, traumatism, foreign bodies.

What are the symptoms?

Headache, malaise, chill, fever, temperature 103° to 105° F. at the beginning, pain in the epigastrium, pulse 120 to 160; throat feels dry and tender, difficult and painful deglutition, altered voice, offensive breath, pain in the ear, with deafness and noises in the ear; loss of appetite, thirst, constipation, restlessness; tongue coated. May have a rash. On inspection one or both tonsils will be seen to be swollen and much inflamed; the inflammation generally extends to the surrounding structures. After a few hours white or yellowish spots are seen scattered over the surface of the tonsil: these collections of mucus are very tenacious, but when removed leave the open mouth of the follicle clean and shining. If at the end of six to ten days the inflammation does not subside, a chill will occur, indicative of suppuration, and the case will develop into a quinsy; in which case the swelling of the tonsil will be increased, and if not treated gangrene may follow.

From what diseases must tonsillitis be differentiated?

From diphtheria and scarlet fever.

What is the prognosis?

Good as to recovery: death sometimes occurs in quinsy from suffocation, due to escape of the pus during sleep. One attack predisposes to another.

What is the treatment?

Mild cases require no *treatment*. In others the remedies advised are aconite, tinctura ferri chloridi, emetics, guaiac, salicylate of sodium. Locally, steam inhalations and hot fomentations or sucking cracked ice and ice poultices; gargles or sprays of plain hot water, or solutions of permanganate of potash, peroxide of hydrogen, etc. In quinsy evacuate the pus early. During convalescence tonics and astringent sprays. For hypertrophied tonsils practise excision.

HYPERTROPHY OF THE TONSILS.

Describe hypertrophy of the tonsils.

Hypertrophy of the tonsils is an equal enlargement of both glands, of hereditary origin, occurring early in life, and, from

pressure upon adjacent parts, producing tinnitus aurium, nasal voice, snoring sleep, and interference with breathing and swallowing. This condition of the tonsils predisposes to acute angina, and is often attended by diseases of the skin, eyes, and bones. Before puberty the growth of the gland ceases.

As regards *treatment*, the milder forms call for no interference. In the severer forms cod-liver oil is of service, and painting the gland with some astringent or cauterizing it with silver nitrate, or ablation of the gland by means of the tonsillitome or the galvano-cautery, or puncture of the gland with the cautery-needle. In ablation avoid the internal carotid artery, which lies internal to and behind the tonsil.

RETROPHARYNGEAL ABSCESS.

Define retropharyngeal abscess, and give the symptoms.

Abscess of the posterior wall of the pharynx may be idiopathic or produced by inflammation of the pharynx and of the cellular tissue surrounding it, as a result of suppurating cervical glands or caries of the cervical vertebræ.

The *symptoms* are: painful deglutition, stiff neck, nasal voice, retraction of the head, difficult breathing if the head is bent forward, fever and restlessness. Examination of the pharynx shows the mucous membrane of a bluish color and bulging of the wall, causing constriction, or the abscess may extend upward beyond the level of the soft palate, or downward, displacing the larynx. On palpation fluctuation will be detected. As the disease advances swallowing and breathing become more difficult, and the respirations are loud and stertorous. In the variety caused by suppurating cervical glands these glands will be found in addition to the other symptoms; and in the variety due to the vertebral caries that disease will have preceded the symptoms for some months. Of the different varieties, that due to the vertebral caries is the most common.

The *prognosis* is doubtful. In vertebral caries it is very bad.

Describe the treatment.

Before pus has appeared ice, leeches, and stimulants can be tried, but as soon as pus forms a free incision must be made. In vertebral caries some authors advise deferring incision as long as possible, as the entrance of air is supposed to hasten the disease of the bone.

INFLAMMATION OF THE ŒSOPHAGUS.

Describe inflammation of the œsophagus.

Inflammation of the mucous membrane of the œsophagus is most frequently caused by the passage of some hard substance, as metal or bone, or some hot or corroding substance, like hot water, acids, lye, though it may be caused by the extension of diseases of the mouth or throat.

The *symptoms* are—burning pain in the œsophagus, neck, back, and præcordia; painful swallowing, intense thirst, retching and vomiting. Ulcers may form and be followed by stricture.

The *treatment* depends upon the cause. If a foreign body is in the œsophagus, the attempt should be made to remove it; care should be exercised lest it be pushed through the wall of the œsophagus. If a corrosive fluid has been swallowed, antidotes should be administered, the thirst appeased with cracked ice, and the pain relieved by fomentations to the neck, and opium internally. Strictures require the use of bougies. Inflammations due to acute diseases take the treatment for the disease.

CONGENITAL FISTULA OF THE NECK.

Describe congenital fistula of the neck.

Congenital fistula of the neck is a fistulous tract extending from the side of the neck, usually near the junction of the clavicle and sternum, to the commencement of the œsophagus near the epiglottis. It is supposed to be due to the failure to close of the second or third gill-fissure. It discharges a thick, tenacious mucus during mastication.

No *treatment*, except surgical in some cases, has as yet served to correct this deformity.

SCLEROSIS OF THE STERNO-CLEIDO-MASTOID MUSCLE.

Describe sclerosis of the sterno-cleido-mastoid muscle.

A cord-like thickening of one of the sterno-cleido-mastoid muscles, occurring during the first weeks of infant life, and upon one side only. The thickening is in the muscle, and is movable; it is from half an inch to one inch long. Its course is not known. It quickly disappears under the use of iodine.

DISEASES OF THE STOMACH AND INTESTINES.

What are some of the most common symptoms attending diseases of the stomach and intestines?

Dyspepsia, bulimia, vomiting, flatulence and colic, diarrhœa, and constipation.

What is meant by dyspepsia?

By dyspepsia, or difficult digestion, is meant a complete or partial loss of appetite, with retarded digestion of the food taken; which indigested food generates gases that disturb the alimentary canal, causing pain and fulness, the condition generally terminating with vomiting and a return to health. The causes are changes in the digestive organs or secretions, nervous influences, or irritation of food; the most frequent cause is changes in the quantity or quality of the digestive fluids.

What is the treatment of dyspepsia?

Withhold all food for a few hours to give the stomach rest, and carefully return to a selected diet. Seek the cause of the dyspepsia, and prescribe remedies accordingly. Hyperacidity of the gastric juice requires alkalies, soda, lime, or magnesia; inflammation of the mucous membrane, bismuth, calomel, small doses, or nitrate of silver, small doses; for irritating ingesta use emetics, mucilaginous broths, and calomel. Dyspepsia attending acute febrile diseases requires no special treatment other than dietary.

What is meant by bulimia?

Bulimia, ravenous hunger, or greediness, is a morbid increase of the appetite, due to bad habits of feeding or it is symptomatic of hypertrophy of the mesenteric glands or chronic cerebral disease. The children are pale, anæmic, of stunted growth, and have frequent foul-smelling stools. At the autopsy the stomach will be found distended and with thickened walls.

The *treatment* consists in regulating the quantity and quality of the food, giving only such as can be easily digested.

Describe the different forms of vomiting in children.

The vomiting of nurslings is attended with no symptoms or bad effects: the anatomy of the infant's stomach is such that the milk easily flows out if the child is dandled or the stomach overfilled. In artificially-fed children vomiting is due to digestive disturbances, and attended with nausea, restlessness, and fever, the vomited mat-

ter consisting of mucus mixed with the food. The vomiting of older children, if due to gastric disturbance, is attended with nausea and extreme depression: if the prodromata of some acute febrile disease, it is not so profound, though still retching in character; if due to cerebral disease, it is projectile—without any warming the contents of the stomach gush from the mouth.

What treatment is indicated in vomiting?

The vomiting of nurslings requires no interference, unless it is continuous and affects the child's health, in which case shorten the length of the nursing and keep the child quiet afterward. Artificially-fed children require inspection and correction of the food, and to quiet the stomach lime, magnesia, or calomel. In acute diseases and cerebral affections the vomiting is a part of the history, and will cease without treatment. Vomiting due to gastric disturbances requires an emetic, followed by washing out of the stomach, bismuth or calomel to allay the irritability of the viscous, and regulation of the diet.

Define flatulence, and give its causes.

Flatulence is an abnormal accumulation of gas in the stomach and bowels. The causes are an increase of the natural gases, which peristalsis has failed to remove, or their retention by mechanical obstructions, or gases generated by fermentation. Meteorism is the name given to the acute form, and flatulence or tympanites to the chronic.

What symptoms attend this condition?

Distension of the abdomen, which, if very great, will cause dyspnoea and interference with the circulation; pain or colic, intermittent in character and attended with distortion of the countenance, flexing of the limbs on the abdomen, extreme restlessness, loud cries, and sometimes convulsions. It generally ends with the escape of gas and faeces and vomiting. The abdomen will be tympanitic.

What treatment is indicated in flatulence?

To remove the gas as rapidly as possible. For this purpose use enema of warm water with or without olive or castor oil; cold water or warm chamomile tea; massage of the bowels; keep the patient warm with blankets or hot bottles; regulate the diet. For the colic use antispasmodics or narcotics, and then treat the cause. If due to indigestible food, evacuate the stomach and give a purge;

if due to faecal impaction, a cathartic and possibly an enema will be required; if due to mechanical obstructions or if toxic, the treatment will be indicated by the conditions present.

What is diarrhoea, and what are the causes?

Diarrhoea is a change in the quantity and quality of the faecal discharges. The *causes* are indiscretions in diet, atmospheric changes, diseased conditions in some part of the digestive apparatus, intercurrent disease, etc.

Describe the various forms of diarrhoea.

Diarrhoea simplex: the stools are increased in number, are softer than normal, but yellow.

Diarrhoea lienterica: the stools contain undigested food.

Diarrhoea ab lactatorum: the stools are bright yellow and very thin and watery; they are odorless and neutral or alkaline; in a test-tube they separate into a clear portion above and a flocculent mass below; the microscope shows remnants of undigested food, fragments of epithelium, and brown globules of various sizes; albumin is not found unless blood is present; triple phosphates are found in alkaline stools.

Diarrhoea with green stools: due to the presence of converted coloring matter of the bile.

Diarrhoea containing mucus in shreds and lumps, which the microscope shows to contain mucus-corpuses, epithelium, and granular masses. These evacuations are painful.

Diarrhoea with gray or clay-colored stools: due to the absence of the coloring matters of the bile.

Diarrhoea with intensely foetid stools: generally due to enteritis folliculosa, and attended by intense pain in evacuation and erythema intertrigo.

Diarrhoea with pus in the stools: rare, except following dysentery or in ulceration of the intestines.

What is the treatment of diarrhoea?

In many cases correction of the diet and removal of the offending material by means of a purge will suffice for a cure. Others will require an astringent after the purge; others, again, demand *treatment* of the primary disease that has induced the diarrhoea.

Describe constipation, and give the causes.

If the bowels do not discharge their contents twice a day in

young children and once a day in older children, the condition is known as constipation.

The *causes* are deficient intestinal mucus, too much starchy food, astringent foods or medicines, too little fluids taken into the system, or an excessive discharge of perspiration and urine, decreased peristalsis, mechanical obstructions.

The *symptoms* attending this condition are perverted appetite or anorexia, restlessness, gaseous accumulation distending the abdomen, in extreme cases displacing the viscera, eructations of gas, vomiting, emaciation.

Give the treatment of constipation.

In the simplest form regulating the diet, baths, friction of the skin, and limited exercise will often suffice. Before drugs are resorted to attempts should be made to correct the trouble with enemata, soap or glycerin suppositories, massage of the bowels, practised by gentle pressure with the tips of the fingers along the whole course of the colon. Of drugs, commence with the simplest laxatives, and stop their use as soon as possible. In every case of obstinate constipation examine the patient carefully for obstruction.

Describe catarrh of the mucous membrane of the stomach.

Gastritis catarrhalis, catarrhus ventriculi, is an inflammation of the gastric mucous membrane, attended by an increased secretion of mucus, and produced by errors in diet, irritants of various kinds, acute diseases, changes in the stomach-wall, etc.

The *symptoms* manifested are—continuous pain in the stomach, increased by pressure and warm fluids, relieved by cold fluids; gaseous distension of the epigastric region, with increase of temperature at that point; vomiting of clear glairy mucus if the stomach is empty; frequent vomiting of the food; later in the disease, emaciation. The bowels, urine, and circulation are not much disarranged.

Give the treatment.

Regulate the diet, give milk, and, to correct the increased secretion of mucus and check the vomiting, nitrate of silver or creasote is the most serviceable remedy.

Describe toxic inflammation of the stomach.

This condition arises from the swallowing of poisonous acids or alkalies, which cause erosion and destruction of tissue, followed, if recovery takes place, by cicatrices and strictures.

The *symptoms* are—intense pain, nausea, vomiting, the vomited matter being bloody; bloody saliva, loss of voice, painful swallowing, convulsions, cold perspiration, small pulse, cyanosis, bloody stools if the intestines are involved; if recovery occurs, there will be marked emaciation.

Give the treatment.

For caustic alkalies use vegetable acids or olive oil; for corrosive acids use alkalies, as magnesia or chalk, or soap-water. Check the pain with opium and nourish the child with cold milk.

Describe perforating ulcer of the stomach.

This condition is rare in young children: it is occasionally met with in chlorotic girls about the time of puberty, its *symptoms* and *treatment* being the same as in the adult.

Describe hemorrhagic erosions of the mucous membrane of the stomach.

This condition is found post-mortem, and as it occurs in so many different diseases, it has no particular symptoms of its own: it is most frequently met with in atrophic and tuberculous children. The affection consists of spots of extravasated blood of varying sizes, covered with brownish, fibrinous flakes, the mucous membrane having a bluish color, and sometimes, from loss of tissue, the spots are depressed.

Describe softening of the stomach.

Gastro-malacia, or softening of the stomach, is purely a post-mortem condition, in which the coats of the stomach are softened and destroyed by ulcerative processes or the formation of pseudoplasma. The seat of the trouble is the most dependent portion of the viscus. Two varieties are found, a light and a dark one, depending upon the quantity of blood in the stomach-walls at death. The softening may be slight or extensive, sometimes perforating the stomach and allowing its contents to escape into the peritoneal cavity, sometimes extending to adjoining organs.

Define catarrhal inflammation of the intestines, and give the causes.

Intestinal catarrh (catarrhus intestinalis) is an inflammatory process involving the mucous, and sometimes the submucous, coats of the intestine, of an acute or chronic character, and caused by improper or indigestible food; derangements of the wet-nurse; stoma-

titis, causing increased salivary and mucous secretion; exposures to cold; and weaning: in older children it is due to errors in diet, unripe fruit, etc.

Describe the appearance of the intestinal canal.

The mucous membrane is turgid and injected; the solitary glands are swollen and prominent—if the disease is chronic they will have ruptured; the epithelium is cast off; the mucous membrane is swollen, and in the chronic form the submucous and muscular coats are thickened; the mesenteric glands are sometimes reddened, but never infiltrated and hypertrophied.

Give the symptoms.

The child is fretful and restless, crying continuously and refusing its food: if the disease is confined to the small intestine, there will be but slight pain; if to the large intestine, the pain will be severe and attended with tenesmus. Diarrhœa is the most prominent symptom: the stools are watery and very frequent, of the normal color at first, but soon changing to a pale yellowish or grayish tint, and without any odor. The abdomen is distended, tympanitic, and painful around the navel. The urine is diminished, high-colored, and contains the double urates of soda. There are intense thirst and anorexia. There is no acceleration of temperature while the diarrhœa lasts, but if the diarrhœa is profuse, symptoms of collapse may appear; after the diarrhœa ceases a fever of reaction may supervene. During convalescence the stools are hard or slimy and very offensive. Catarrh of the stomach and bronchitis are the most frequent complications.

The *prognosis* is not unfavorable unless the disease runs into enteritis folliculosa.

Give the treatment of catarrhal inflammation of the intestines.

Dietetic; all errors should be corrected; no milk should be allowed, except in the case of a breast-fed child, and not then if the mother or wet-nurse is out of order, in which case put her under treatment. Withhold all food from the child for a few hours, and then only give animal broths or albumin-water until the diarrhœa ceases, when the former diet of milk or other food can be gradually resumed. If there is undigested food in the intestine, this should be removed by means of castor oil or calomel or an enema. Then astringents can be used—opium, bismuth, nitrate of

silver, calomel, or mercury with chalk, in small doses; pulv. ipecac. et opii comp., pulv. cretæ comp. Of these opium ranks first.

Define enteritis folliculosa, and give the causes.

An inflammatory process involving the mucous and submucous tissues, the solitary glands and Peyer's patches, and extending to the mesenteric glands. It is also known as strumous enteritis and *tabes mesenterica*.

The *cause* is a tuberculous diathesis: in such patients causes that would excite a simple enteritis in non-tubercular patients produce a follicular enteritis.

Describe the lesions in the intestines.

The submucous tissue is infiltrated; the mucous coat shows evidences of catarrh; the solitary glands and Peyer's patches are swollen and prominent—some at the site of the swelling of the follicles are ruptured; the mesentery is injected, its glands enlarged, and on section show a red or yellow-white surface, depending upon the length of the disease; in the yellowish-white glands the connective tissue is increased. Pigmentation of the mucous membrane is slight. The enlarged glands, at first dry, hard, and cheesy, afterward soften and form ulcers.

Give the symptoms of enteritis folliculosa.

The *symptoms* at first are those of intestinal catarrh, with the difference that the stools remain liquid, have a putrid odor, and erode the anus and adjacent parts. There are high temperature, intense thirst, tongue coated white or else dry and shiny; stomatitis later, vomiting in some cases, rapid emaciation; in very young children overlapping of the cranial bones, especially the occipital and parietal; tympanitic distension of abdomen, disturbed sleep, sometimes convulsions; toward the end obstinate constipation succeeds the diarrhœa. In some cases the enlarged mesenteric glands can be felt through the abdominal walls.

What are the differential diagnosis and prognosis?

From tubercular meningitis and tubercular peritonitis: in tubercular meningitis the abdomen is retracted; there are constipation, projectile vomiting, slow pulse, and contracted or dilated pupils. Tubercular peritonitis has more pain and a more rigid abdomen.

The *prognosis* is always unfavorable.

What is the treatment of enteritis folliculosa?

Give the child good breast-milk; check the diarrhœa; cod-liver oil, flannel bandage to the bowels, anodyne poultices to relieve the pain.

Define dysentery, and give the causes.

Dysentery is an inflammatory disease of the large intestine, attended with mucus and bloody stools and tenesmus. The disease may be epidemic or sporadic; the *causes* similar to those for intestinal catarrh. The sporadic form is also known as colitis and ileo-colitis.

Describe the symptoms of dysentery.

The *symptoms* of the two varieties are similar, those of the epidemic being more severe and dangerous. The disease commences as a simple diarrhœa. After a few days the character of the stools changes: they contain lumps or granules of glairy mucus, and soon streaks of blood appear or a bloody stool is passed; the blood is pink or bright red; as the mucus increases the fæcal matter decreases. In the epidemic variety ulcers form, and as they rupture pus and sloughed mucous membrane are mixed with the stools, giving them a dirty grayish color and putrid odor. The number of the stools varies from three or four to twenty or thirty in the twenty-four hours, depending upon the severity of the attack. Pain around the navel and along the course of the colon is present. Tenesmus is present, and often so intense as to produce prolapse of the rectum. In bad cases paralysis of the rectum may occur. Vomiting occasionally occurs, more particularly in the epidemic form. Fever occurs late. Delirium and convulsions may occur. Emaciation is marked, especially in the epidemic form. There is intense thirst; the appetite is lost.

The most frequent *complications* of the sporadic form are lobular pneumonia and tabes mesenterica; of the epidemic form, perforation of the intestines and peritonitis, pyæmia, strictures of the intestines, hepatic abscesses, and icterus.

The *course* of the disease is four to six days for the sporadic, ten to fourteen days for the epidemic, form.

Give the treatment of dysentery.

Warmth and regulation of the diet, breast-milk for infants if possible; in older children or those artificially fed, mucilaginous broths. Of drugs, opium by enema or the mouth, calomel alone or with

opium, ipecac, nitrate of silver, alum, vegetable astringents; washing out the bowels.

Define intussusception, and give the causes.

Intussusception, or invagination of the intestines, is the slipping of one portion of the bowel into another.

The *cause* is a contraction of some portion of the bowel, as from paralysis, or the weakening of some portion of the bowel, as from protracted catarrh, and increased peristalsis, pulling the larger over the smaller portion.

The intussusception consists of the three layers: the outer, or sheath, the intussusciptiens; the inner and the middle, together called the intussusceptum. The outer and middle have their mucous surfaces together, the inner and middle their peritoneal surfaces. The invagination generally takes place from above downward. The results are disturbed circulation in the invaginated mesentery, œdema and hyperæmia of the invaginated bowel, and inflammation and plastic exudation upon the peritoneal covering of the overlapping tube. The œdema of the invaginated tube may be so great as to occlude the bowel, stercoraceous vomiting resulting.

What are the symptoms of intussusception?

Intense colicky pains, tympanitic distension of abdomen, sometimes a tumor can be felt; constipation, sometimes diarrhœa with bloody stools; vomiting, which as the obstruction increases becomes stercoraceous; collapse and death in three or four days from peritonitis or gangrene of the constricted bowel. Spontaneous recovery sometimes occurs, but the bowel is always constricted at the point of invagination.

What is the treatment of intussusception?

Absolute rest, restricted diet, the avoidance of laxatives, cathartics, or anything that will increase the peristalsis. Gaseous inflations may be tried, but laparotomy offers the best chance for recovery.

Describe inguinal hernia in children.

The various forms of herniæ found in the adult are met with in children, but the most frequent is the congenital. In this a portion of the bowel descends through the processus vaginalis, which has failed to close after the descent of the testicle, and lodges in

the tunica vaginalis in contact with the testicle. The coverings are the scrotum, the tunica vaginalis, and the intervening tissues. Rarely is there any omentum in the sac. In some cases hydrocele complicates the case. The lesion is produced by straining, crying, coughing, muscular action, etc. It presents an oval, soft, compressible, non-fluctuating tumor, not transparent. As it returns after reduction, the swelling commences at the top of the scrotum, whereas hydrocele commences at the bottom. The testicle is in relation to the mass and cannot be separated. The neck of the tumor is constricted. If hydrocele is also present, the fluid can be forced back into the abdominal cavity by lifting the scrotum, and then the hernia can be detected. In girls the bowel escapes into one of the labia majora through the inguinal canal, which, being open for the passage of the round ligament, has failed to close before birth.

What is the treatment of inguinal hernia?

The *treatment* is by means of properly-applied trusses and correction of the affection that caused the rupture. Some cases recover spontaneously.

Describe fissure of the anus.

Fissure of the anus may occur in nurslings as well as older children. It consists of little cracks, sometimes so small as to be found with difficulty, in the folds of the anus, due to injury caused by hardened fæces and straining, and producing pain at stool and sometimes blood-stained fæcal masses, or a few drops of blood may pass.

The *symptom* that attracts attention is the pain at and after stool.

The *treatment* consists in regulating the bowels and cauterizing the fissure with silver nitrate or carbolic acid.

Describe rectal polypi.

Rectal polypi are generally of the mucous variety: they are situated near the anus, cause pain and hemorrhage at stool, and will sometimes protrude from the anus. They can easily be felt by introducing the finger into the rectum. The disease is rare.

The *treatment* consists in the removal of the growth.

Describe prolapsus ani.

Prolapsus ani is an escape of the lower folds of the mucous membrane into the anus. It is produced by prolonged diarrhoea,

causing swelling and sagging of the mucous coats of the bowel and relaxation of the sphincter, or constipation and straining, forcing the bowel down. It presents a puffy mass of a blue or pink color, and with a central opening or a section several inches in length. It is attended with pain.

The *treatment* consists in restoring the prolapsed bowel, beginning at the centre, using ice and some simple ointment to aid the manœuvre, and correcting the condition that caused the trouble.

Describe constriction of the anus.

Constriction of the anus is rarely noticeable during the first year of life unless the child becomes constipated; later, as the stools become formed, it may appear. The passage of the stools is difficult or impossible, and tympanites, or even stenosis, may occur. Injections or laxatives will correct the constipation, and the symptoms will disappear. Sometimes the opening is so small that it is necessary to make an incision, and to stretch the anus and keep it open with plugs of cotton or oakum.

Describe imperforate anus.

This condition is noticed by a failure of the child to pass meconium, distension of the abdomen, and restlessness. The deformity is of several varieties: the simplest is where the rectum ends blindly at the skin; and a simple incision relieves the difficulty; or the anus may exist, but have failed to unite with the rectum; or the rectum may terminate in the vagina or bladder; or the rectum does not exist at all, a portion of the large intestine only being present and terminating near the umbilicus.

The *cause* is retarded development.

The *treatment* consists in a surgical operation.

What worms are found in the alimentary canal of children?

Tænia solium; *tænia mediocanellata*; *bothriocephalus latus*; *ascaris lumbricoides*; *oxyuris vermicularis*; and *tricocephalus dispar*.

Give a brief description of each variety of intestinal worm.

Tænia solium—also known as *tænia cucurbitina*, chain-worm, long tape-worm—class of *Cestodiæ*, is a yellowish-white, tape-like, jointed worm, from fifteen to thirty feet long and three to five lines wide. The head is very small, globular or bulbous, with a slightly prominent conical snout, surrounded by a double row of curved silicious hooks, from twelve to fifteen in each row, and farther back four

suckers symmetrically arranged. The neck is very slender, from half an inch to an inch long, marked transversely; the segments, at first very small, much broader than long, gradually become flattened and square, then longer than broad, and narrower at the anterior extremity; the corners are blunt. The male and female organs open by one orifice, situated laterally, now on one border, now on the other, but not regularly alternating. New joints constantly form at the head, while at the tail old joints are cast off, appearing singly in the stools.

Tænia mediocanellata, class of Cestodiæ, resembles *tænia solium*, but longer, head larger, flattened in front, four powerful and prominent suckers, but neither snout nor hooks; links broader, thicker, and firmer; sexual organs more developed and divided, their orifice near the posterior border.

Bothriocephalus latus—also known as *tænia lata*, the broad tape-worm—class of Cestodiæ, resembles the others, but is much larger, head club-shaped, without hooks or snout, but with two longitudinal slits or suckers, one on each side, neck very short, segments broad, of a brownish color, the sexual organs in the centre and separate; the male anterior ova are brown. The sections are not cast off singly, but in numbers joined together.

Ascaris lumbricoides—also known as round-worms—class of Nematodiæ, a long cylindrical worm, tapering to the ends, of a reddish, grayish-red, or yellowish-white color, from five to sixteen inches long and one to three lines in diameter; head separated from the body by a circular depression; has three small prominences, with the mouth between, lined with numerous teeth. The body has transverse markings. Sexes separate: the male is shorter and curved posteriorly, where the sexual organs are placed, indicated by a couple of very fine small white hairs; the female is straighter, thicker at the hinder extremity, and has the sexual opening about the end of the anterior third.

Oxyuris vermicularis, also known as *ascaris vermicularis*—pin-worm, thread-worm—class of Nematodiæ, is small and fusiform, males from one to two lines long, females about five lines, whitish or yellowish white, with fine transverse striæ; head has a terminal mouth, with three lips, and a wing-like expansion on the dorsal and ventral surfaces. The male is rolled up posteriorly, where the sexual organs are; the female is straight, with the sexual organs at the junction of the anterior and middle thirds.

Tricocephalus dispar—also known as whip-worm—class of Nema-

todiae, thread-like in form, from one to two inches long, anterior end hair-like, with a simple terminal mouth; posterior end thickened. The male is smaller and coiled posteriorly, having the penis at the end; the female is larger, thicker, and only slightly curved, and has posteriorly a simple, straight vagina, with a uterus containing an immense number of ova.

Where are the different varieties of worms found?

All the varieties of tape-worm occupy the small intestine; rarely do they enter the large intestine or stomach.

The *round-worms* occupy the small intestine, but often travel into the large intestine, rarely into the stomach, œsophagus, mouth, etc.

The *pin-worms* occupy the rectum and lower part of the colon; they often migrate around the anus into the vagina, urethra, and under the prepuce, also into the small intestine and stomach.

The *whip-worms* occupy the cæcum, sometimes the colon, rarely the ileum.

Tape-worms are generally found singly, rarely two or three; of the *round-worms* there are usually five to ten, sometimes two or three hundred; of the *pin-worms* collections of hundreds or thousands are found; the *whip-worms* are not numerous, but sometimes several hundred will be found.

What is the origin of these parasites?

No ova develop in the alimentary canal, but escape in the stools, enter the alimentary canal of domestic animals in their food or drink, there rupture; the released embryo buries itself in the mucous membrane, works its way into the tissues, and develops into a head, neck, and bladder-like appendage: in this condition it is taken into the human alimentary canal, attaches itself to the mucous membrane, the bladder drops off, and the worm commences to grow. These parasites enter the system in raw or underdone meat, the *tænia solium* in pig's flesh, the *tænia mediocanellata* in beef, the *bothriocephalus latus* in fish or mollusks. The *ascaris lumbricoides* and *oxyuris vermicularis* are conveyed in water, vegetables, fruit, and impure starchy substances.

What symptoms are caused by these parasites?

Pain, gnawing or boring in character, increased by salty, sour, or aromatic food, relieved by milk and fatty food; the appetite may be diminished; vomiting occurs in some cases; irregularity of the

stools; irritation of the genitalia when the oxyuri have invaded those parts, causing leucorrhœa in girls and balanitis in boys, itching of the mons and anus, dilatation of the pupils, and convulsions. But it must not be forgotten that these general symptoms are common to children, and upon them a probable diagnosis only can be made: the surest symptom is the presence of the worms or their segments in the stools; the oxyuri will often be found around the anus.

Describe the treatment of intestinal worms.

The *treatment* consists in removing the parasites. With the tape-worm it is absolutely necessary that the head be removed, and the worm must be carefully examined to ascertain that fact. Against the tape-worm, male fern, kousso, pomegranate, kamala, pumpkin-seed are used; of these, the first two are probably the most efficacious; against the round-worm, santonin, calomel, pink-root, cow-hage, and wormseed, of which the first two, combined in proper doses, are most often successful; against pin-worms, enemata of plain water, continued daily for a few weeks, or water containing some intense bitter, as quassia or quinine, or salt water, or water containing a few drops of turpentine or camphor—these latter to be repeated every other day until no more worms are seen—will be all that is required. After the expulsion of the parasites the child will generally begin to mend if it has run down any, but if necessary, treatment should be instituted.

DISEASES OF THE LIVER.

What affections of the liver manifest themselves in children?

Aside from icterus neonatorum, syphilitic inflammation of the liver and fatty liver are the most frequent lesions. Other diseases of the liver are very rare in children, and when they do occur their history and treatment are the same as for the corresponding affections in the adult.

Describe syphilitic inflammation of the liver.

The liver presents a roughened, uneven appearance; its peritoneal covering is indurated; on section spots are found of a firmer consistency than the normal tissue, of a pale color, and composed of granules, oil-globules, and a few liver-cells.

The *symptoms* pertain chiefly to the primary disease: condylomata around the anus and at the angles of the mouth; the exan-

thema and ozæna; nutrition is interfered with, and there is marked emaciation; the skin has a grayish, earthy hue, instead of being icteric; the nodular masses on the surface of the liver can sometimes be felt, and its free border is thickened and more rounded than in health. Fibrous degeneration of the kidney and anasarca sometimes complicate.

Treatment avails but little, as these children generally perish, especially if fed artificially: the best results are obtained from inunctions with mercury.

Define fatty liver, and give the pathology.

Fatty liver is that condition of the organ in which the fat in the hepatic cells is greatly increased, producing changes in the color and consistency of the organ. It does not occur primarily, but as a complication of some of the wasting diseases, as tuberculosis, rickets, syphilis, chronic intestinal catarrh, etc., and is due to the changes in the blood, which becomes overloaded with fat, which is absorbed during the progressive emaciation. The organ is larger, flattened, with thickened, rounded edges; its upper surface is smooth, white, glistening, and doughy, the impress of the finger remaining; on section the color is yellowish-red or pale yellow, and the fat clings to the knife. The fat consists of olein, margarin, and traces of cholesterin, and in quantity may reach 43 to 44 per cent. In milder cases the fat involves individual scattered cells, giving the cut surface of the liver a mottled appearance. The sugar-forming and bile-secreting functions of the liver are not interfered with.

Give the symptoms and treatment of fatty liver.

The *symptoms* referable to the liver are rather obscure. There may be enlargement, and if this occurs in the course of a tuberculosis, rachitis, etc., and is accompanied with distension of the abdomen, flatulence, and diarrhoea, a diagnosis can be made.

The *treatment* resolves itself into the removal of the disease causing the trouble.

What are the most significant malformations of the liver?

Of the changes in form there are—quadrangular, triangular, flat, or round; the division into lobes may be absent or multiplied. The liver may be absent: this occurs especially in acephalæ; it may be double, which occurs in diplogenetic monsters. It may go up into the right pleural cavity through a congenital fissure of the

diaphragm; or it may be exposed through rupture of the umbilical cord; and it may be transposed where the other viscera are transposed.

DISEASES OF THE SPLEEN.

Describe the affections of the spleen in children.

Primary affections are extremely rare. Some acute diseases, as typhoid, are attended by inflammation of this organ, but enlargements of the gland are mostly met with in chronic diseases, as rickets, intermittent fever, etc. Palpation of the spleen is impossible, except in cases of extreme enlargement: in such cases, if the abdominal walls are very thin, the organ and its hilus can be felt. Percussion of the spleen is difficult, unless it is enlarged, because so small a portion approaches the chest-wall. The centre of the spleen lies in the ninth intercostal space, at a point crossed by a line dropped from the posterior axillary border to the great trochanter.

The *treatment* of splenic enlargements depends upon the treatment of the disease producing the hypertrophy.

PERITONITIS.

Define peritonitis in children, and give the etiology.

Peritonitis is an inflammation of the whole or a part of the serous membrane that lines the abdominal cavity and covers the viscera contained therein. The idiopathic form is extremely rare. In very young children some affection of the navel, as inflammation of the umbilical vessels, is the most frequent cause; in older children the disease is due to injury, as burns, wounds, perforation of intestines or stomach, intussusception, strangulated hernia, etc.; tuberculosis is sometimes a cause. The disease may be acute or chronic, localized or general, or metastatic.

What are the pathological appearances in peritonitis?

At different portions of the peritoneum capillary injection and plastic exudation will be found: this is most marked where the surfaces of the intestines come in contact, and often leads to adhesions. In that form of localized peritonitis due to inflammation of the umbilical vessels the inflammatory process is found around the umbilical ring and on the concave surface of the liver, and as a result of the plastic exudation adhesions form between the liver and the adjoining viscera.

Give the symptoms of peritonitis.

Abdominal pain, aggravated by pressure and motion, and producing interrupted crying: continuous crying puts the abdominal muscles in motion and intensifies the pain. The child's position is the dorsal decubitus with extended legs, or they may be flexed. Tympanites, occasionally vomiting, diarrhoea, anorexia, thirst; urine may be retained or passed a few drops at a time; fever high; pulse small and rapid; respirations superficial, frequent; face pallid; there may be convulsions. Lobular pneumonia is the most frequent complication.

What is the prognosis?

The *prognosis* is generally bad. In nurslings, or where it is due to inflammation around the umbilicus or of the umbilical vessels, it is usually fatal in from one to three days; peritonitis due to perforation is generally rapidly fatal; tubercular peritonitis is chronic in the majority of cases, and may not be recovered from.

Give the treatment of peritonitis.

Absolute rest and strict hygienic and dietetic principles must obtain; poultices, opium, quinine, stimulation. Where the disease commences at the navel, this part must be kept absolutely antiseptic. The traumatic form may be benefited by the use of leeches and small doses of calomel.

ASCITES.**Give the definition and causes of ascites in children.**

Ascites is an accumulation of serous fluid in the peritoneal sac. In children it is always secondary to some other disease. In very young children the amount is very small.

Describe the morbid appearances.

The fluid has a yellowish color, sometimes red from admixture of blood; it contains albumin and the salts of the blood. Evidences of peritonitis more or less marked are also present: these consist of opacities and exudative material. The heart or kidneys will generally show the cause of the ascites.

Give the symptoms.

Abdominal distension, except in mild cases; skin stretched and shining; percussion dulness; fluctuation; navel prominent; fre-

quent desire to urinate, but only small quantities of urine are passed, of a dark color; bowels loose; slight perspiration.

The *prognosis* is generally bad, except in cases complicating the acute fevers.

What is the treatment of ascites?

This depends upon the primary disease. Generally speaking, the *treatment* should be stimulating—good diet, alcohol, iron, etc.; diuretics and diaphoretics.

DISEASES OF THE MESENTERIC GLANDS.

What are the chief changes in the mesenteric glands due to disease?

In *tabes mesenterica* the glands are first hypertrophied and indurated, then atrophied; in older children and where the disease lasts long enough they undergo cheesy degeneration and ulcers form. In typhoid the glands hypertrophy, and sometimes abscesses form.

DISEASES OF THE HEART.

Describe the most common congenital abnormalities of the heart.

Absence of the heart occurs in monstrosities in whom the upper part of the trunk is absent.

A double heart occurs in double monsters.

Abnormal position of the heart in cases of transposition, or the heart may be in the centre of the chest.

Exposure of the heart from absence of the chest-walls in whole or in part; or from defects in the diaphragm the heart may be found in the abdominal cavity.

The heart may be broad, cylindrical, or fissured, small or large. Through failure of the septa to form there may be one auricle and one ventricle, or two auricles and one ventricle, or one auricle and two ventricles; or because of irregular formations of the septa the auricle of one side may communicate with the ventricle of the other side.

The pulmonary artery may be absent or constricted at its origin, and dilated beyond the ductus arteriosus.

The aorta may be misshapen or completely closed.

The aorta may supply the upper part of the body, and the pulmonary artery, through the patent ductus arteriosus, the lower part.

The aorta may arise from the right ventricle, the pulmonary artery from the left, or both may arise from one ventricle.

The aorta may have two equal or unequal roots, one from the left, the other from the right, ventricle.

The bulb of the aorta may be very much enlarged, acting as a third ventricle.

The ductus arteriosus may remain permeable, may be absent, or may develop into a permanent vessel.

The venæ cavæ and pulmonary veins may be transposed or may terminate in one auricle.

The valves may be thickened, hypertrophied, cartilaginous, or absent.

The foramen ovale may be patent or prematurely closed.

The columnæ carneæ and chordæ tendineæ may be increased in number or wrongly inserted.

What symptoms attend these malformations?

Where the heart is absent or double or exposed, or the large vessels are transposed, the children perish at birth or soon after.

Changes in the conformation of the heart or its component parts do not interfere with a child's existence, but the derangement of the circulation retards its development and its life is short.

With the milder degrees of malformations adult life, and even old age, may be reached.

Where the deformities of the heart or vessels are extreme the children are born asphyxiated, and soon die from atelectasis of the lungs; they are cyanotic, cold, sleep most of the time, cough, have a bluish tongue; the cry is low and interrupted. In milder forms of abnormalities or if the children survive, other symptoms appear: pigeon breast from lack of development of the pectoral muscles; bulbous fingers with claw-nails, from impeded circulation; enlargement of the veins of the skin and cardiac palpitation; short breath on exertion, epistaxis and hæmoptysis, anasarca and albuminuria.

Excepting hypertrophy, which can be easily detected, the form of lesion present can only be surmised.

What is the treatment of malformations of the heart?

The *treatment* comprises regulation of the food, clothing, and exercise of the patient, and the avoidance of depleting remedies in the treatment of any intercurrent disease.

Define endocarditis, and give the varieties and causes.

Endocarditis is an inflammation of the lining membrane of the heart. It may be simple or ulcerative.

The *causes* are rheumatism, scarlet fever, diphtheria, pleurisy, pneumonia, Bright's disease, pyæmia, septicæmia, and cardiac inflammations.

Give the pathology.

The inflammatory process commences in the connective tissue, and the exudation forces its way through the endocardium to its surface, appearing at first as red spots, which become elevated, causing roughening of the surface; upon these roughened spots the fibrin of the blood is collected. The exudation may be absorbed, but this is rare: it generally remains, and produces permanent changes in the lining of the heart, most marked at the valves; or shreds of the exudation or of the fibrin are washed away in the current, and form thrombi in some other part of the body: the most frequent locations for these are in the spleen, kidneys, and brain. In the ulcerative form the spots of exudation pass through the various stages of ulceration, terminating in perforation or destruction of the valves or their appendages. The left side is most frequently affected.

Describe the symptoms of endocarditis.

In the simple form, where the exudation is slight or is absorbed, the *symptoms*, both subjective and objective, are so meagre as to have no diagnostic value. In the other forms pain, if present, is very slight; palpitation, increased by crying and exertion, and dyspnoea are always present, also restlessness and anxiety, and oppression of the chest, fever, emaciation, and nervous phenomena, even to delirium. Examination of the heart shows enlargement, with extension of impulse and a mitral systolic murmur; there may be an aortic systolic murmur as well, and a stenosis at the mitral valve may also occur, but these last two are rare; the right side of the heart is very rarely affected.

What is the differential diagnosis and prognosis?

From functional disorders, anæmic murmurs, and pericarditis. Entire recovery is extremely rare: a cardiac lesion more or less severe results in most every case; death sometimes occurs from exhaustion or emboli, but more often from some complication.

What is the treatment of endocarditis?

As the disease is always secondary, the *treatment* must be of the primary affection, but insist upon absolute rest, regulate the diet, attend to the condition of the bowels, and protect the surface from changes of temperature; mild counter-irritation over the heart; opium if restlessness is extreme; and digitalis, aconite, gelsemium, carbonate of ammonium, strophanthus, sulphate of sparteine, etc., according to their indications, may be tried.

The resulting heart lesion requires careful attention, and the avoidance of all things on the part of the patient that will tend to make it worse.

Define pericarditis, and give the varieties and causes.

Pericarditis is an inflammation of the pericardium. It may be circumscribed or general, and is fibrinous, purulent, or tuberculous. It may be due to injury, extension of inflammation from neighboring parts, rheumatism, scarlatina, tuberculosis, the eruptive fevers, kidney trouble, pyæmia, pleurisy, peritonitis, etc.

Describe the pathology.

Though the disease may be circumscribed at the beginning, starting on the parietal or visceral surface, its tendency is to spread, so that it is more frequently found as a general affection. The inflammation is immediately followed by a plastic exudation. In the fibrinous form the two surfaces are thickly coated with a shaggy, yellowish-white membrane, which unites the two surfaces in whole or in part. This exudation becomes organized and vascular, and with it there is an effusion of yellowish flocculent fluid; later this fluid is absorbed and the two surfaces become more or less firmly attached, or in the circumscribed form the friction between them will cause the exudation to be rubbed off and disappear, leaving only fibrinous spots.

In the purulent form the conditions are the same as in the fibrinous, but the fluid degenerates into pus, or may have been pus at the start. In the pyæmic pericarditis in new-born children attending inflammation of the umbilical veins and peritonitis, the fluid is thin, of a brownish-red color, and contains grayish-brown lymph-flakes.

In the tuberculous form tubercles, slightly larger than the milary tubercles of the lungs, are found in the pericardium, isolated or in groups.

Give the symptoms of pericarditis.

The subjective *symptoms* are often very mild: in general there are severe pain, dyspnœa, oppression of the chest, rapid pulse, cyanosis, and nervous phenomena, as fainting, delirium, etc.

The *physical signs* are those of enlargement, the friction-sound, displacement of apex-beat, and, if the fluid accumulation is extensive, intensified beat and irregular rhythm. The friction-sound must be differentiated from an endocardial murmur; its character and time in relation to the beats of the heart will aid in making the distinction. The pulse, at first strong, rapid, and incompressible, later becomes small and compressible. If the effusion is large, there will be undulating movements in the jugulars, or even bulging at the end of systole, from damming back of the blood, due to the inability of the right auricle to dilate because of the pressure upon it of the fluid.

What is the prognosis?

Recovery without any lesions, which is extremely rare, or recovery with a crippled heart from adhesions, dilatation of the chambers, etc., or death, which is usually sudden.

Give the differential diagnosis.

From endocarditis, hydropericardium, pleurisy, cardiac hypertrophy.

Give the treatment of pericarditis.

Treat the primary disease. For the pericarditis, when the diagnosis is certain, fomentations and opium until the fluid appears, then mild counter-irritation over the heart, tonics, stimulants, regulate the diet; absolute rest; digitalis, strophanthus, sparteine, oxygen, tr. ferri chloridi; paracentesis in extreme cases. During convalescence and afterward extreme care in exercise, diet, etc. Such a patient should be watched for a long time. Pyæmic pericarditis of the new-born is generally fatal, and no treatment avails anything.

Define hydropericardium, and give the causes and pathology.

Hydropericardium is a non-inflammatory accumulation of serum in the pericardium. It may be caused by defects in the heart, but it is most frequently a part of general dropsy due to cardiac or renal disease; its most common cause is scarlatinal nephritis. The pericardium shows nothing abnormal: there is merely accumulation

of yellow serum of from one to four ounces in amount; the heart-muscle is more yellow than red.

What symptoms attend this disease?

There are no *symptoms* unless the effusion is extensive. Then there will be oppression of the chest with difficult breathing, and the general symptoms of dropsy and pericarditis except the absence of the friction-sound.

The *prognosis* depends upon the cause: where this is disease of the heart, a fatal result follows; where scarlatina is the cause, recovery can be attained by proper treatment.

What is the treatment of hydropericardium?

The *treatment* pertains to the primary disease; for the dropsy diuretics are of the most service.

RHEUMATISM.

Define rheumatism, and give the synonyms and causes.

Rheumatism is a specific febrile disease, attended with multiple inflammation of the large joints and fibrous tissues, the heart, and other organs.

The *synonyms* are—Rheumatic fever; Acute rheumatic arthritis; Polyarthritides rheumatica.

The *causes* are exciting and predisposing. The predisposing causes are heredity, a rheumatic diathesis, age (rare under five, most frequent between fifteen and thirty, but found at all ages, in one case twenty-five days old), the temperate zone, sex (more frequent in males), previous ill health. The exciting causes are sudden changes of temperature, errors in diet, acute diseases, as scarlet fever, diphtheria, dysentery, etc. "Growing pains" may be due to rheumatism.

Give the pathology.

Various theories have been held. It is admitted that some morbid principle enters the blood. The opinion that this is uric acid or lactic acid is losing ground. The most generally accepted opinions at present are that it is some affection of the nervous system and that it is caused by a micro-organism.

What are the symptoms?

High fever, rapid pulse, great thirst, restlessness, anorexia, *costiveness*; urine passed in small quantities, dark colored, loaded with

urates; profuse perspiration, sudamina. The fever lasts eight to ten days unless complications occur. The joints are swollen, red, and extremely painful; generally the knees are first affected, then the ankles, next the elbows, wrists, and spinal column. The joints never suppurate; the swellings disappear and leave no trace behind.

The *diagnosis* is made upon the fever, the swelling and pain in the joint and their wandering from one joint to another.

The disease lasts about fourteen days if no complications occur; these prolong the disease and may give it a fatal termination.

The *prognosis* as to recovery is good. If the heart is affected, it may be crippled for life.

Give the treatment of rheumatism.

Rest in bed, protection from currents of air, flannel to the skin, the joints wrapped in cotton, diet milk and beef-tea, lemonade or barley-water, stimulants if needed, alkalies, bicarbonate of potash or soda, or the citrate or tartrate of potash or soda, combined with citric acid or lemon-juice, opium or morphia, salicylate of soda, salicylic acid, salicin, salol, bromide of ammonium, quinine, iodide of potash—are remedies that are used. Hot-air or vapor baths are of service. The joints may be rubbed with olive oil or chloroform liniment or covered with hot fomentations, or blisters may be used. Treat complications. Convalescence must be carefully watched. Quinine as a tonic and to prevent relapses.

DISEASES OF THE BLOOD-VESSELS.

What diseases of the arteries occur in children?

None. Sometimes anomalies are met with as regards the size of vessels or their complete absence.

Describe nævus vasculosus.

Nævus vasculosus, arterial telangiectasis, or erectile tumors, consist of a dilatation of the capillaries of the skin or subcutaneous tissue, and are usually situated somewhere about the face. On the skin the tumor is red, rough, and irregular; in the subcutaneous tissue it is doughy and the skin may be normal or permeated with vessels. These tumors are generally congenital: very small at birth, they grow rapidly, sometimes attaining a large size. In some cases they will shrivel up and disappear without any treatment. Subcutaneous tumors disappear on pressure, sometimes pul-

sate and have a buzzing sound, and during crying grow tense and large.

What is the treatment of *nævus vasculosus*?

The cutaneous *nævi* can be removed by vaccination, which is done by puncturing the excrescence with a needle, and after the slight hemorrhage has stopped smearing the surface with vaccine virus. The course is the same as in ordinary vaccination. This fails where a child has been vaccinated. Other treatment used is puncturing with needles and rubbing with magnesia, oxide of zinc, etc., or with irritating ointments. In the subcutaneous variety pressure, the ligature, or galvano-cautery are the methods resorted to; the last is probably the most successful.

Thrombi are frequently found in the sinuses of the brain in children at autopsies, but they have slight clinical importance, as it is often uncertain whether they formed before or after death.

DISEASES OF THE NOSE AND THROAT.

Describe the general symptoms pertaining to diseases of the nose.

Snuffling, snoring sleep, evidences of obstruction, as mouth-breathing, nasal voice, a dull expression of face, discharge, sometimes attended with marked odor.

What is epistaxis? and what are the causes?

Epistaxis, or nose-bleed, is a hemorrhage more or less profuse from some portion of the nasal cavities. It is due to the rupture of the capillaries in the mucous membrane, which is generally caused by injury or ulceration. The general causes are hemorrhagic diathesis, plethora, scrofulosis, chlorosis, cardiac and pulmonary affections, Bright's disease, acute febrile conditions, and it may be "vicarious" in girls at puberty.

What are the symptoms?

The hemorrhage itself, appearing either in drops (*stillecidium sanguinis*) or in a stream (*rhinorrhagia*). The quantity varies; as a rule it is small and harmless. Children under three or four are rarely affected, and then from injuries. Sometimes the blood flows back into the pharynx and is swallowed, causing hæmatemesis or black, bloody stools. In febrile conditions or venous congestions, or when menstruation is due, the hemorrhage is often beneficial;

in chlorosis it tends to aggravate the trouble. Severe hemorrhage may give rise to profound anæmia.

What is the treatment of epistaxis?

Check the hemorrhage. This can be accomplished by pledgets of ice in the nose and ice to the nape of the neck; astringents, as the persulphate of iron, in the nose; if the bleeding point can be seen, touching it with nitrate of silver, solid stick; tamponing both the anterior and posterior nares. Treat the cachexia.

Define coryza, and give its causes.

Coryza—rhinitis or catarrh—is a catarrhal inflammation of the mucous membrane of one or both nares, attended with swelling and redness.

The *causes* are mechanical and chemical irritants, changes of temperature, infection, and cachexia.

Describe the symptoms.

The mucous secretion of the nose is largely increased: at first it is thin and liquid, but soon becomes thickened, tenacious, and opaque, in chronic cases inspissated, forming crusts. It is alkaline, and may cause erosion from the amount of soda it contains. If the inflammation extends to the frontal sinuses, fever and pain in the sinuses are present. It may extend through the lachrymal tube, producing conjunctivitis; through the Eustachian tube, producing otitis media; through the larynx into the bronchi, producing capillary bronchitis; or through the œsophagus into the stomach and intestines, producing catarrhal gastritis and enteritis. Each of these complications will be manifested by their individual symptoms. Examination of the nose shows the mucous membrane swollen and congested.

The acute form generally terminates in complete recovery in from two to four days; sometimes in cachectic children or from repeated attacks it becomes chronic. It is only in new-born or nursing children that any danger need be apprehended, and here it is due to the occlusion of the nares, interfering with the nursing from the necessity of breathing through the mouth.

Give the treatment of coryza.

Protect the body from atmospheric changes; generous diet; stimulate the skin by baths and friction; quinine, in some cases opium; soothing applications to the nose; cocaine, menthol, and

camphor in benzoinol will be found useful. Treat the complications and cachexia on general principles.

Define nasal polypus, and give the causes.

A nasal polypus is a new formation in the nose. Two forms are found: a soft, gelatinous tumor, called a mucous polypus, which springs from the surface; and a firm, hard tumor, called a fibrous polypus, which arises from the submucous tissue or perichondrium. Both are pediculated. If large, they take the shape of the cavity and may hang into the pharynx. They never occur in young children, and are much rarer than in adults.

The *causes* are as yet unknown.

Give the symptoms.

While the growths are small there are no *symptoms*, but when they occlude the nostrils the mouth remains open, the voice is nasal, there is snuffling, smell and taste will be decreased, and there is a continual desire to blow the nose, with increased discharge. The growth can often be seen. The fibrous form may occlude the lachrymal canal and Eustachian tube. Mucous polypi may return after removal; the fibrous forms, if thoroughly removed, do not.

What is the treatment of nasal polypus?

The *treatment* consists in the removal of the growth. The mucous polypus can often be removed with forceps: some form of snare is best for either form, though the galvano-cautery is useful in the fibrous variety. The hemorrhage is slight and stops spontaneously, or may be checked by pieces of ice in the nose.

Describe foreign bodies in the nose.

Little children have a natural proclivity for putting small objects into the nose, and all sorts of things have been found in this location. Insects will sometimes enter the nasal cavities while the child is asleep, and the round-worm will wander into one of these orifices from the pharynx. If a child puts a foreign body into the nose, it instinctively attempts to remove it, with the result of pushing it farther back.

The *symptoms* are pain and coryza, with an intensely foetid discharge if the body has remained for any time. In some rare cases there may be delirium, meningitis, and death.

Sneezing will sometimes remove the body, or at least bring it into *view*, when it can be removed with forceps or a scoop; in some cases

chloroform may be needed to quiet an irritable child or where the pain is excessive. Prolonged manipulations are hurtful. Splitting the nose should only be done in extremely urgent cases.

Define catarrhal laryngitis, and give the etiology.

Catarrhal laryngitis—inflammation of the larynx, pseudo-croup—is a catarrhal inflammation of the mucous membrane of the larynx, sometimes extending to the submucous connective tissue and muscles.

The *causes* are changes of temperature, injuries, irritants, influenza, and it may occur as a complication in diphtheria, tonsillitis, measles, rheumatism, etc., and in erysipelas from spreading of the inflammation.

Give the symptoms.

There is a slight nasal and bronchial catarrh during the day, but the child plays as usual, has a good appetite, and goes to sleep without causing any anxiety; he may cough a little in his sleep, and perhaps snore. Suddenly in the early morning hours he awakens, gasping for breath, with a hoarse, stridulous, barking cough, rough, noisy, stridulous breathing, congested countenance, blue lips, face bathed in perspiration, extreme restlessness (in very young children), with head thrown back on the pillow; older children will sit up in bed grasping the knees to fix the pectoral muscles. After an hour or two the paroxysm passes and the child drops to sleep, though the croupy breathing and short cough continue. A second attack in the same night is rare. In the morning the child arises and eats his breakfast as usual; during the day the bronchial symptoms continue, and the attacks recur the next and the succeeding nights for from three to eight days, but with decreasing intensity. The pulse is increased during the attack, but fever, with malaise, etc., is not present. The paroxysms never occur in the daytime, probably because the child, being awake, can remove the mucus from the larynx by coughing. Recovery is the rule.

It must be differentiated from diphtheritic laryngitis.

What is the treatment of catarrhal laryngitis?

An emetic, with a warm bath and inhalations of steam, will often cut short the paroxysms. Afterward warm clothing, an easily-digested diet, and regulation of the bowels are indicated. Hot fomentations or the ice-bag to the throat, hot drinks, astringent sprays,

and aconite, quinine, bromide of potassium, belladonna, and, for the cough, opium and ipecac. Some extreme cases may require tracheotomy.

Define laryngismus stridulus, and give the causes.

Laryngismus stridulus—suffocative laryngismus, spasmodic croup, spasmus glottidis, spasm of the larynx, etc.—is a complete or incomplete spasmodic closure of the glottis or vestibule of the larynx. It may be acute or chronic. The *exciting causes* are nervous, as fright, hysteria; it also occurs during acts of swallowing, coughing, crying, depressing the tongue, etc. The *general causes* are sex (boys are attacked more frequently than girls); age (occurs in children from six months to three years old); heredity (children of nervous parents); craniotabes; digestive disturbances.

Give the symptoms.

A child, previously in normal health, suddenly stops breathing, throws back its head, and tears at its throat with its hands. The mouth is slightly open and produces snapping sounds; the countenance is anxious and congested; the eyes are set and protruding; the body is rigid, or the lower limbs hang limp and powerless. After half a minute to a minute a few whistling inspirations, followed after a pause by a whistling expiration and normal breathing, end the paroxysm. There may be but the one paroxysm, or several may follow in quick succession. Convulsions may occur if the disease has lasted for some time, in which the upper extremities are strongly flexed and the thumbs adducted, the lower extremities extended and the toes abducted; opisthotonos may occur. Between the paroxysms, if these have been slight, the child enjoys its normal health; if severe, it is exhausted and irritable, and suffers from anorexia, emaciation, and febrile conditions.

The child may die in its first attack or the disease may run through several months, the paroxysms increasing in frequency and intensity, the child finally dying in a paroxysm or from some complication, of which lobular pneumonia is the most frequent; or the attacks may gradually decrease and recovery occur: such a termination is extremely rare, and the children are delicate for a long time.

The *prognosis* is generally unfavorable.

What is the treatment of laryngismus stridulus?

During the attack dash cold water in the face, slap the back and

buttocks, elevate the epiglottis with the finger, practise artificial respiration and catheterization of the larynx. After the attack has passed, hot baths, hot fomentations to the neck, emetics, and antispasmodics to prevent recurrence. Between the paroxysms seek the cause and remove or treat it. Cod-liver oil, alone, or with phosphorus for rickety children; the bromides for choreic and nervous children; vegetable tonics and regulation of the diet for those who are run down or dyspeptic. Change of air, stimulation of the skin by a daily cold bath, and avoidance of all excitement will be found of service where there is no assignable cause.

Describe paralysis glottidis.

Paralysis of the glottis is a rare affection in children. It is produced by disease of the central nervous system or from pressure from enlarged lymphatic glands upon the pneumogastric and recurrent laryngeal nerves.

The *symptoms* are labored, noisy breathing, attended with cough on deep inspiration, with a hoarse voice or complete loss of voice. The disease is chronic, and is attended with bronchitis; sometimes tuberculosis develops with fatal results.

The *treatment* is by cod-liver oil and, locally, iodine, belladonna ointment, etc. to the enlarged glands, to reduce their size if possible; if these show a tendency to suppurate, poultices and free incision; in severe cases extirpation of the glands by surgical operation.

DISEASES OF THE THYROID GLAND.

What diseases affect the thyroid gland?

Inflammatory processes from injuries; goitre, congenital, cystic, and hypertrophic.

Describe these conditions.

In each, enlargement of the gland takes place. The simplest form is where an injury has affected the gland and is amenable to general treatment. The congenital form, where children are born with goitre, is attended with asphyxia or marked interference in breathing at birth; but the growth generally disappears after a few weeks without any treatment.

In the hypertrophic form a single lobe or section of a lobe may be involved, the symptoms depending upon the pressure exercised by the enlargement, and affecting only the parts adjacent thereto.

in some cases the enlargement surrounds the œsophagus and trachea, producing serious results.

In the cystic form the vesicles become enlarged into cysts, with softened walls and containing a thickened yellowish fluid.

What is the treatment?

Tincture of iodine will often cause the growth to disappear or decrease in size. In some extreme cases extirpation or evacuation of the cyst-contents and injection with iodine may be required. General tonic treatment—cod-liver oil, iron, etc.

DISEASES OF THE THYMUS GLAND.

What diseases affect the thymus gland in children?

Hemorrhages are sometimes found post-mortem; their cause is uncertain. It was supposed that asthma was in some cases due to pressure of the enlarged gland, but this is regarded as very doubtful. The most frequent affections are tuberculosis and cancer. In the former the lesions are found elsewhere, and it is only at the autopsy that the gland will be found diseased. In carcinoma symptoms affecting the heart, lungs, and large blood-vessels will be present, and dulness on percussing the upper portion of the thorax in front.

The *treatment* is that of the disease causing the enlargement.

DISEASES OF THE BRONCHI AND LUNGS.

Define bronchitis, and give the synonym, varieties, and causes.

Bronchitis is a catarrhal inflammation of the mucous membrane lining the bronchial tubes.

Synonym.—Bronchial catarrh.

Varieties.—Acute, subacute, chronic, and capillary.

Causes.—Predisposing: climatic and temperature changes, improper clothing, depleted system, rickets, tuberculosis, and chronic diseases generally; exciting: irritants, as gases, dust, foreign bodies, exposure to drafts, sudden chilling of the body surface, contagion, as influenza, extension of nasal catarrh, the exanthemata.

Describe the pathological appearances.

An increase of mucous secretion, which is thin and transparent, or thick, tenacious, and white, gray, yellow, or brown in color, depending upon the severity and length of the disease. The mucous membrane is thickened and pink or red in color, depending upon

the severity of the inflammation; the blood-vessels are injected. In the exanthemata similar lesions are found on the bronchial mucous membrane as upon the skin. The disease may involve only the larger bronchi, or both the large and small, only one lung or both. A lung affected with bronchitis does not collapse when cut open.

Give the symptoms, prognosis, and complications.

Pain behind the sternum, in severe cases through the diaphragm after coughing; general malaise; fever, the height depending upon the severity of the attack; cough, at first short, hacking, frequent, and dry—later, violent and attended with the discharge of mucus, which in young children is swallowed; emaciation and dyspnoea in severe and protracted cases. In the chronic form there is no fever; the chief subjective symptom is the cough, which is paroxysmal and attended with the expectoration of dark-colored, fetid sputa. In the capillary form there is always fever, sometimes very high, marked dyspnoea, cyanosis, prostration, chilliness, sometimes convulsions, and cough of mild or severe form. The physical examination gives the most satisfactory results. Inspection gives negative results, except in capillary bronchitis, where the increased number of respiratory movements is marked; percussion is negative in all forms; palpation reveals the vibrations induced by the râles, but auscultation is of most service. This, in the acute and subacute forms, reveals at the beginning dry, sonorous, and sibilant râles, which change their position; later large and small mucous râles; in the chronic form the mucous râles are much larger and more abundant, but sonorous and sibilant are also heard; in the capillary form crepitant râles are heard, generally most abundant posteriorly, and the dry and moist râles at other portions of the lungs.

Acute and subacute bronchitis may last from a few days to two weeks; chronic may last for years; capillary is of short duration, though it may run into pneumonia.

The *prognosis* is generally good: death may occur from suffocation, exhaustion, or complications.

The *complications* are pneumonia, emphysema, acquired atelectasis, etc.

Give the treatment of bronchitis.

In the acute and subacute forms in very young children mild counter-irritants to the chest, as camphorated oil or turpentine,

alone or combined, or Stokes's liniment; an occasional emetic, as ipecac, to remove the mucous accumulation from the tubes, antispasmodics, etc. In older children counter-irritation and ipecac, paregoric, tolu, squills, ammonium chloride or carbonate, etc. In all cases nourishing diet, stimulants, tonics, rest in an equable temperature, and protection of the surface. In the chronic form terebene or some of the turpentine derivatives, iodide of potassium, anodynes, or possibly nauseant expectorants, cod-liver oil, iron, quinine, tonics, change of air, stimulation of the skin, woollen clothing, nourishing diet. In the capillary form counter-irritation to the chest by the mustard bath, followed by flaxseed jacket-poultice; absolute rest in bed; frequent change of position; aconite if fever runs high; emetics, ipecac or apomorphine, if quick action is needed; alcohol, strychnine, oxygen in threatened collapse; later, nauseating expectorants with ammonium chloride, iodide of potash, etc.; milk diet until convalescence, then highly nutritious; cod-liver oil, change of air.

Define pneumonia, and give the causes.

Children are affected with both lobar and lobular pneumonia, but the most frequent form, especially in very young children, is the lobular or broncho-pneumonia.

Pneumonia is an inflammation of the vesicular structure of the lungs, attended with an exudation into the alveoli, rendering them impervious.

The *causes* are all things that lower the tone of the system, exposures to changes of temperature, irritants, existing disease, as the exanthemata, pertussis, diphtheria, bronchitis, influenza, etc. In the new-born it is often pyæmic. The dorsal decubitus is said to induce it.

Give the pathology of pneumonia.

Lobar pneumonia presents the stages of red and gray hepatization. The croupous exudation fills the cavities of the alveoli, shutting out the air, preventing the lung from collapsing, and giving the cut surface a dry, red, and granular appearance; later, the coloring matter of the blood-corpuscles in the exudation disappears, cells are formed from the exudation and the alveolar walls, and the color changes from red to gray: this change continues until the exudation becomes milk-like in consistency, and is absorbed, and

resolution occurs or abscesses or indurations appear. Lobar pneumonia in children never degenerates into tuberculosis.

Lobular pneumonia is catarrhal, not croupous, in character, and has no stages, as there is no hepatization. The lobules are felt as hard lumps in the lung-tissue; on section they appear bluish red, the color shading off into the surrounding tissue; the alveolar walls are thickened, and yield a reddish, slightly frothy secretion; the affected lobules sink if thrown in water; the tissue surrounding the lobules is emphysematous. Evidences of catarrhal bronchitis are also present. If the affected lobules are near the surface of the lung exudations occur on the pleura.

Describe the symptoms of pneumonia.

Lobular pneumonia commences insidiously as a complication of bronchial catarrh: the cough gets worse, and a fever, mild at first, but intermittent and growing worse until it becomes continuous, appears. The pulse is greatly increased, to 180 or 200; respirations are increased, sometimes to 90; they are shallow and attended with recession of the intercostal spaces and movements of the *alæ nasi*, and with a facial expression of suffering.

Lobar pneumonia is generally ushered in with a convulsion and extreme prostration; temperature high and pulse rapid at the start; respiration rapid and shallow, panting in character; movements of *alæ nasi*; face anxious, flush over the malar bones; cough short and hacking during the first stage, absent or nearly so during the second stage, returns in the third stage, with free expectoration in older children; anorexia, thirst, sometimes diarrhœa, urine decreased; the cry is low, moaning, and interrupted; if pleurisy complicates there will be evidences of pain, especially on coughing.

The *physical signs* in *lobular pneumonia* are negative, except the auscultatory; crepitant râles are heard at the seat of the pneumonia, and the signs of bronchial catarrh in the other portions of the lungs.

In *lobar pneumonia* over the affected area inspection gives decreased motion and exaggerated on the opposite side; palpation gives increased vocal fremitus, percussion dullness, and on sound side increased resonance; auscultation gives high-pitched breathing and slight crepitation at the beginning—later, as the consolidation increases, marked bronchial breathing only is heard; then as resolution begins the crepitant râle reappears, followed by larger moist

râles and normal vesicular breathing. The sputum, if the child is old enough to expectorate, has the same appearances as in the adult, but infants and most young children swallow the sputum.

Lobar pneumonia runs through its three stages in from six to nine days; lobular pneumonia is generally more rapid, though it may seem longer from the coincident bronchitis.

Prognosis.—Children under two bear lobar pneumonia badly; older children go through the disease equally as well as adults. Lobular pneumonia is peculiarly fatal, as the children are already debilitated from the preceding disease. An unfavorable symptom is swelling of the veins on the back of the hands.

What treatment is indicated in pneumonia?

The bronchitis preceding lobular pneumonia requires prompt and energetic treatment to prevent, if possible, the pneumonia from developing. When either form of pneumonia develops, a flaxseed jacket-poultice, large enough to completely surround the chest and come up over the shoulders, and as hot as can be borne by the nurse's cheek, is most agreeable to the patient, and will hasten the stage of resolution: such a poultice, if an inch thick and put in flannel, will remain hot five to six hours; it should be pinned down the front or tied with tapes. Ice cloths, the ice-bag, or ice-water coil can be used if preferred. Stokes's liniment or the camphorated oil-and-turpentine liniment is of service at the beginning, before the physical signs are positive, and during resolution; also at the commencement a mustard bath. The condition of the emunctories should be corrected if needful: as a general rule, a dose of calomel puts the system in a better condition to fight the disease. The diet should be concentrated and nutritious, and milk seems to meet these indications; if it disagrees it can be treated with lime-water or barley-water or peptonized. Alcohol will be needed in nearly every case, in some from the start, but the condition of the pulse must guide us in its use. Of drugs few are needed: uncomplicated cases will recover without any medication; for irritable cough, opium or some of its derivatives, codeine, morphine, etc.; for a flagging heart, digitalis, carbonate of ammonium, strophanthus, sparteine, alcohol, oxygen; for a high temperature and to relieve the congestion of the pulmonary mucous membrane, aconite, veratrum, liq. ammon. acetatis. A good all-round mixture is aconite, sweet spirits of nitre, spirits of Mindereri, paregoric, syrup of ginger, and water: in this mixture the aconite should be in small doses, and its effect

upon the heart watched: to a child one year old not over one-tenth of a minim of the tincture every one to two hours. Cough mixtures are of no service. Convalescence requires cod-liver oil, iron, increased nutrition, change of air.

Define acquired atelectasis of the lungs, and give synonyms and causes.

Total or partial absence of air from the alveoli. It may be limited or extensive.

Synonyms.—Pulmonary collapse; Apneumotosis.

Causes.—Compression due to rachitic chest deformities, pleural accumulations, hydropericardium, tumors, obstruction of a bronchial tube, lobular pneumonia.

Give the pathological appearances.

In a mild form there is merely increased density, but generally the alveoli are obliterated, and at first vascular; soon the density increases to a leathery consistency, of a brown or gray color and liver-like appearance. The lung surrounding these atelectatic spots is emphysematous.

What are the symptoms and prognosis?

Dyspnoea, more or less cyanosis of fingers and face, rapid, feeble pulse, feeble voice and cough, cold extremities, prostration. The physical signs: percussion negative, unless the disease is extensive; auscultation gives fine crepitant râles.

The *symptoms* of bronchitis or pneumonia if these are present.

Prognosis.—The disease is chronic, and the *prognosis* depends upon the extent, severity, and duration of the attack: it may be recovered from, or it may terminate fatally in a shorter or longer time.

Give the treatment of acquired atelectasis.

Nutritious diet, best hygienic surroundings, alcohol, cod-liver oil, counter-irritation to chest, heart stimulants; in extreme cases emetics, stimulants, oxygen.

Describe pulmonary emphysema in children.

Pulmonary emphysema, or dilatation of the alveoli, in children is vesicular and unattended with rupture of the alveolar walls. It is most generally due to pneumonia, atelectasis, or tuberculosis. The affected lung does not collapse, floats in water, feels like an air-cushion, and has a yellowish-gray color. It is produced by an

accumulation of air in the cellular tissue. There are no symptoms aside from increased respiration. Barrel-shaped chest does not occur.

The *treatment* is solely tonic.

Define pulmonary œdema, and give the cause and pathology.

Pulmonary œdema is an effusion of serum into the air-vesicles and interstitial tissue of the lungs.

Causes.—Cardiac, pulmonary, and renal diseases, measles, scarlet fever, and miliary tuberculosis. The affected lung does not collapse, is yellowish-gray in color, pits on pressure, crepitates; a section has a smooth, glistening surface, from which exudes a frothy red or yellow serum.

What symptoms attend this condition?

Extreme dyspnœa, suffocative attacks, voice low and indistinct, cough loose, pulse small, but not rapid.

Physical Signs.—Percussion often unsatisfactory, slight dullness in some cases; auscultation gives moist, sibilant râles over the affected area; sonorous râles in the large bronchi which disappear on coughing. Pulmonary œdema is usually bilateral.

The *prognosis* depends upon the cause; œdema due to cardiac and chronic pulmonary disease is generally fatal.

Give the treatment of pulmonary œdema.

It is generally that of the causative disease, but diuretics and diaphoretics are indicated. If the dyspnœa becomes extreme, an emetic will often relieve it. In older children dry cups to the back will be of service.

Describe hæmoptysis in children.

Hæmoptysis is rare in children, except as a complication of pertussis or tuberculosis. The blood always bursts from the mouth and nose in a stream. In pertussis it is a question whether it comes from the lungs or the larynx.

The *treatment* is symptomatic and that of the disease causing the hemorrhage.

Describe pulmonary hemorrhagic infarction in children.

It always occurs as a complication of purpura, tuberculosis, and cardiac diseases. The infarctions are generally located at the roots of the lungs: they appear as small, distinct, dark-red spots; a section is dry, smooth, and granular, and yields on pressure a bloody

fluid containing fine blood-coagulæ; the bronchi adjoining the infarctions are filled with coagula.

The *symptoms* are indefinite, and resemble those of broncho-pneumonia. Recovery may occur from absorption of the coagula, or gangrene of the lung may develop, but the *prognosis* is generally grave.

There is no *treatment* aside from that of the primary disease.

Define gangrene of the lungs, and give the causes and pathology.

Gangrene of the lungs is a putrefactive disorganization of the lung-tissue.

Causes.—Foreign bodies, traumatic pneumonia, pyæmia, noma, pulmonary infarction, exanthemata, typhoid fever.

Pathology.—The gangrene may be diffused or circumscribed: in the diffused form a brown, putrid slough spreads over a large portion of the lung, and the tissues become liquefied and infiltrated with a frothy, flocculent, putrid ichor. This condition rarely occurs alone, but is associated with the circumscribed form. In the latter a small portion of the lung is affected: at this point a greenish-black moist slough appears; this slough becomes detached and lies in a gangrenous excavation surrounded by gangrenous ichor, or it dissolves into ichorous fluid surrounded by a sloughing excavation with ragged walls. Circumscribed gangrene occurs mostly on the pleural surface of the lung, and if the detached slough drops into the pleural cavity, it will set up pleuritis and pneumothorax. Hemorrhage from rupture of the blood-vessels passing through the gangrenous cavity sometimes occurs.

Give the symptoms and treatment of gangrene of the lungs.

Emaciation, often extreme, increased respiration, small, rapid pulse, paleness of skin, prostration, fætor of breath, cough with very offensive expectoration, hemorrhage if a blood-vessel ruptures, sweats, hectic, and delirium in severe cases, followed by death. The physical examination gives circumscribed dulness, bronchial breathing, and sibilant and crepitant râles.

The *treatment* in severe cases is of little service. The indications are nourishment, stimulants, tonics, anodynes, and disinfectants—carbolic acid, creasote, thymol, eucalyptol, turpentine, chlorine, acetate of lead, etc.; during convalescence cod-liver oil, iron, change of air.

Describe periodic nocturnal cough in children.

This is a very rare affection. It occurs most often in tuberculous

cases, though it may be present in healthy subjects. The child has no paroxysms during the day, but every night, for weeks and months sometimes, it will awaken and cough severely for two or three hours: there is no expectoration, and from sheer exhaustion the child finally falls asleep. In protracted cases the children suffer from anorexia and anæmia.

In the *treatment* nourishment, tonics, fresh air, and proper clothing are of most service; antispasmodics, anodynes, and narcotics give only negative results.

DISEASES OF THE PLEURA.

Define pleurisy, and give the varieties and causes.

Pleurisy, or pleuritis, is a partial or general inflammation of the visceral or parietal pleura, or both. It may be acute, subacute, or chronic with effusion; with pus (empyema) or dry.

The *causes* are pneumonia, bronchitis, pericarditis, sudden changes of temperature, the exanthemata, rheumatism, pyæmia, abscess, etc.

What are the pathological appearances?

In pleurisy before birth or in the new-born the surface of the pleura is covered with a thin whitish or grayish fibrinous exudate that is easily removed, and in the sac is a small quantity of yellow serous effusion. In older children, in the acute form, there will be reddening of the pleura, roughening of its surface from fibrinous exudation, and adhesions between the two surfaces if this exudate becomes organized; in the subacute form the conditions are similar but more intense, and a more or less abundant serous effusion, containing flocculi of lymph, occupies the cavity, displacing the lung and adjacent organs. As this effusion disappears adhesions form, sometimes interfering with the proper expansion of the lung. In the chronic form the sero-fibrinous effusion of the subacute variety undergoes purulent degeneration from excessive cell-proliferation from the pleural surface, or plastic material thrown out on the pleural surface undergoes transformation into pus, or a sero-purulent fluid accumulates in the cavity. In some rare cases of suppurative pleurisy the liquid portion of the pus is absorbed and the solid parts become cheesy and calcified.

Describe the symptoms of pleurisy.

Fever, chill in older children, rapid pulse, anorexia, thirst, insomnia, restlessness, pain which disappears as the fluid accumulates,

cough short and dry, increased respirations, shallow in the acute, labored when effusion occurs, nausea, sometimes vomiting, constipation.

Physical Examination.—Inspection shows diminished action on the affected side in acute pleurisy: when effusion occurs there will be distension of the chest, bulging of the intercostal spaces, and displacement of the heart and viscera; percussion gives negative results in the acute form: when the effusion appears, flatness over its site, increased resonance at other parts of the lung; auscultation will give friction-sounds in the acute form, and at the level of the fluid, when effusion occurs, absence of all respiratory sounds below the level of the fluid, bronchial breathing and bronchial catarrh in the lung above the fluid. The hypodermic needle will determine the character of the fluid.

Give the prognosis.

As to life, it is pretty good, but deformities may occur from absorption of pus and recession of the chest-wall, or from sinuses perforating the chest-wall, or from adhesions displacing the thoracic organs. It will aggravate diseases that it complicates, and may hasten a fatal termination.

What is the treatment of pleurisy?

In acute pleurisy opium to allay the pain, rest in bed, stimulants, nourishment, and make the patient comfortable; counter-irritation to the chest. If the fluid is serum, rest, mild counter-irritation, and salines are about all that is needed; the fluid will disappear without aspiration; empyema requires free incision and drainage. Resection of the rib is not always necessary; washing the cavity is not necessarily indicated unless the pus has a fœtor. General tonic treatment during convalescence.

Define hydrothorax, and give its etiology.

Hydrothorax, or dropsy of the pleura, is a non-inflammatory accumulation of serous fluid in the chest.

The *causes* are general dropsy from cardiac and renal disease and intermittents. It is most usually bilateral.

Give the symptoms and treatment of hydrothorax.

Dyspnœa, interference with the action of the heart and with oxidation of the blood. Anasarca in cardiac and renal troubles precedes the *symptoms* of hydrothorax; the intermittents have œdema of

lower extremities, enlarged spleen, and the peculiar cachectic appearance. Physical examination gives bulging of the intercostal spaces, displacement of apex-beat of the heart, displacement of the lungs, liver, etc., dullness which changes by changing the position of the fluid. It is distinguished from pleurisy with effusion by the absence of pain and friction-sounds and the fact that it is usually bilateral.

The *prognosis* is generally unfavorable.

The *treatment* should be highly nutritious and sustaining, and attempts should be made to remove the fluid by acting on the kidneys and skin. During convalescence quinine and iron.

DISEASES OF THE BRAIN.

Give the definition, synonyms, and causes of acute hydrocephalus.

Acute hydrocephalus is an inflammation of the meninges of the brain, characterized by the presence of tubercles.

Synonyms.—Tubercular meningitis; Basilar meningitis.

Causes.—Predisposing: the tubercular diathesis; exciting: the exanthemata, diarrhœa, chronic affections of the ear, skin, and scalp, bad food and hygiene, injuries.

Describe the appearances post-mortem.

The dura mater is rarely affected. The pia mater may be congested or pale and infiltrated with serum, fibrin, or pus. Small gray miliary tubercles will be found along the vessels on the convexity, but most abundant at the base; the inflammation is most marked at the base, attended with a turbid serous effusion or a thick, yellow, semi-plastic layer; the ventricles are distended with a serous effusion, which flattens the convolutions and causes œdematous softening; the ventricular membrane is thick and opaque. Evidences of tuberculosis will be found in other parts of the body.

What are the symptoms of acute hydrocephalus?

The premonitory *symptoms*, which usually last from two to three weeks, are—progressive emaciation, pale face, lustrous eye, drowsiness, loss of interest in former amusements, moroseness, peevishness; sleep at night is restless and attended with sudden, frightened cries; anorexia, constipation, vertigo, unsteady gait, abdominal pain; slight fever may be present, especially in the evening. As the disease advances these symptoms become aggravated.

As effusion commences there will be vomiting, constipation, headache, fever, retracted abdomen, slow irritable pulse, irregular breath-

ing, pupils contracted, may be strabismus; drowsiness alternates with excitement; mild delirium, cephalic cry, thumbs flexed on the palms; the finger-nail drawn over the skin leaves a red line.

After a few days more profound symptoms appear: the head is retracted; the muscles at back of neck become rigid; sometimes opisthotonos; pupils unequal; pulse slow, irregular, and intermittent; partial or general convulsions; ptosis, strabismus, local paralysis, or complete hemiplegia; constipation, ischuria, or involuntary evacuations; difficult deglutition; respirations irregular, sighing, and Cheyne-Stokes; anorexia; temperature may be subnormal.

Apparent recovery may now occur, but is quickly followed by coma, pulse very rapid and irregular, pupils dilated, fontanelle prominent; paralysis becomes permanent; eclampsia; breathing, sighing and stertorous; involuntary evacuations; cold sweats; abdomen tympanitic, subsultus tendinum; rise of temperature, cyanosis. Death due to coma or asphyxia during a convulsion.

What are the prognosis and differential diagnosis?

The *prognosis* is bad: death may be expected in from sixteen to twenty-one days after the initial symptoms.

It must be differentiated from typhoid fever, simple meningitis, gastro-enteritis, Bright's disease, and infantile remittent fever.

Give the treatment of acute hydrocephalus.

Prophylaxis in children of tubercular parents. For the disease itself palliatives and methods that will prolong life, diaphoretics and diuretics, nutritious diet, avoidance of light and noise, anodynes and opiates, ice-cap; control the convulsions; antipyretics if the fever runs high.

Define acute meningitis; give its causes and pathology.

Simple or purulent inflammation of the meninges, which frequently extends to the brain-substance.

Causes.—Injuries, extension of inflammation from adjacent parts, as ear, nose, eye; erysipelas and exanthemata. If the dura mater is involved, the inflammation is circumscribed, and presents on its surface a layer of fibrinous or purulent exudation; in chronic cases the dura mater is thickened and thrombi form in the sinuses; the inflammation is generally on the pia mater, and penetrates into the convolutions and sulci; it is most marked on the convexity; may extend down the spinal cord; the exudation is yellow or yel-

lowish-green, serous, fibrinous, or purulent; if serous and at the same time rich in fibrin, it clings to the pia mater.

Give the symptoms and treatment of acute meningitis.

Vomiting, constipation, slow pulse, irregular breathing, headache, retracted abdomen, fever, delirium, convulsions, emaciation. These *symptoms* develop rapidly, and the disease runs its course to a fatal termination in from three to six days, thus differing from tubercular meningitis, which it so closely resembles.

Recovery may occur, in which case the symptoms gradually abate, but convalescence is protracted and followed by mental weakness.

The *treatment* comprises absolute rest in a darkened room, ice-cap, anodynes and opiates, and mercurials to salivation. During convalescence general tonic treatment and absolute mental rest.

Describe insolation.

In insolation, or sunstroke, the meninges are congested, there is increased effusion into the ventricles, and the brain-substance is softened. The patient complains of intense headache; delirium follows in a few hours; there are excessive muscular power, flushed face, injected eyes, contracted pupils, pulsation of carotids, hot skin, dry tongue, intense thirst, rapid pulse. If death does not occur within the first few hours, the symptoms gradually abate, the child falls asleep, awakens conscious, and in two or three days health is restored.

The *treatment* consists in the application of the ice-cap, sinapisms to the extremities, stimulating enemata, or cathartics.

The *prognosis* is good.

Define cerebral anæmia, and give the causes and pathology.

Cerebral anæmia is a condition in which there is a deficiency in the quantity or quality of the blood in the capillaries of the brain.

Causes.—Hemorrhages, exhausting discharges, diarrhœa, impaired nutrition, general anæmia.

Pathology.—The brain is pale, soft, and watery; the meninges are infiltrated with serum; sometimes the ventricles contain a normal amount of fluid or they are distended.

Give the symptoms and treatment of cerebral anæmia.

The child rolls its head or bores it into the pillow, plucks at its head, hair, and ears, scratches its face, grows dull and apathetic;

the eyes are half closed and rolled up; the arms are flexed and rigid; thumbs flexed on the palms; the legs flexed or extended and rigid; the muscles at the nape of the neck contracted; tetanic convulsions toward the end; vomiting; anterior fontanelle depressed; cranial bones overlap in very young children; slight anorexia, sometimes greediness; pulse rapid, respirations increased; incessant crying, changed toward the end to moans.

Treatment.—When due to hemorrhage invert the patient, dash cold water in the face, give ammonia, bandage the extremities, transfuse, stimulate; when complicating some disease, treat that, and stimulate the heart, increase the nourishment, and treat the symptoms.

Give the definition, causes, and pathology of chronic hydrocephalus.

Chronic hydrocephalus is a cerebral dropsy.

The *causes* are atrophy, or imperfect development, of the brain, chronic passive hyperæmia, weakness of the vascular walls, occlusion of one or both lateral sinuses, tuberculosis, rachitis, syphilis, the exanthemata.

Pathology.—Serous effusion into the ventricles or upon the surface of the brain; the upper wall of the lateral ventricles may be ruptured; the brain-substance is softened or toughened, the convolutions flattened; in the congenital form the cranial bones are thin and the fontanelles and sutures wide open. The disease may be congenital or acquired: in the former the enlargement of the head may interfere with delivery.

Give the symptoms and treatment of chronic hydrocephalus.

The skull is enlarged, largest where the disease began *in utero*, dome-shaped, and elongated if some of the sutures have closed; the anterior fontanelle, if not closed, will be bulging and pulsate; the eyeballs protrude from pressure upon the superior orbital plate; the superficial vessels of the scalp are prominent from interference with the circulation; the face looks small and wizened. In the acquired form there will be fever, outcries, vomiting, headache, gnashing of the teeth, delirium, involuntary evacuations; limbs paralyzed and contracted; intelligence unimpaired in some cases, in others mental aberration and imbecility; loss of vision, pupils dilated or contracted, anæsthesia of skin; convulsions usually precede death. Death is due to the cerebral lesions, convulsions, col-

lapse, or intercurrent disease. The disease is chronic, and where the effusion is small may last for years.

Treatment.—Careful feeding, attention to the clothing and hygiene. Cod-liver oil and general tonic treatment; calomel in small daily doses until purging becomes severe; diuretics. Strapping the head and evacuation of the serous effusion are advocated by some, but the utility of these proceedings is doubtful.

Describe encephalocele.

Encephalocele is always congenital. It is due to improper development of the cranial bones and distension of the brain, causing prolapse. Its most frequent location is the occipital region, though it may occur at the root of the nose, angle of the eye, anterior fontanelle, in the temporal region, and other localities. The tumor consists of skin devoid of hair, atrophied, and united to the pericranium and meninges; it contains brain-substance and a large quantity of water. It may be pedunculated or have a broad base, and varies in size from a mere protuberance to that of a child's head. It may burst at birth or the child may live for years, but it interferes with the development of the brain, and such children are apt to be imbecile.

The *symptoms* are purely nervous and due to pressure upon the tumor; they are eclampsia, stupor, and syncope.

What treatment is indicated in encephalocele?

Protection of the tumor from injury. In some extremely large growths evacuation of the contents by repeated aspiration so modifies its size that protection is better obtained. An operation for the reduction of the tumor may in some cases be indicated.

Describe cerebral sclerosis.

A rare affection in children. It may be circumscribed or general, a slight hardening or of cartilaginous consistency; there may be atrophy and textural changes. It is produced by meningeal hemorrhage, purulent meningitis, and in the course of such acute diseases as scarlet fever, typhoid fever, etc.

The *symptoms* in the circumscribed form are epilepsy, idiocy, neuralgias, etc.

The *treatment* is purely symptomatic. Cures are rare, if possible.

What cerebral neoplasms are most frequently met with in children?

Tubercles, carcinoma, and entozoa.

Describe cerebral tubercles as found in children.

They are round or oval, of large size, yellow color, and few in number. Their most frequent location is in the gray substance. They consist of yellow, lardaceous, tough, friable masses, without any cell-formation. The tissue surrounding them is vascular. They are easily removed. They sometimes break down and soften, the contents resembling pus. They are usually complicated with acute miliary tuberculosis, causing death.

The *prognosis* is bad.

Describe cerebral carcinoma in children.

Extremely rare. The medullary form is most frequently met. It is usually of large size, and in one hemisphere only, or nodules are scattered through the brain-substance. It attacks both the gray and white substance. Its growth is rapid. Its pathological conditions are as in the adult.

Prognosis is bad.

Describe cerebral entozoa in children.

Extremely rare. Echinococcus and cysticercus cellulosæ have been found.

What symptoms attend these conditions?

Sometimes none. In cases of tubercles there will be anorexia, vomiting, hemiplegia or paraplegia, amaurosis, deafness, cephalalgia, eclampsia, muscular contractions, and death.

In cases of carcinoma there will be cephalalgia, restlessness, stuttering, amaurosis, deafness, chorea, eclampsia, insomnia, paralysis, exhaustion, and death.

In echinococcus and cysticercus there will be epilepsy, chorea, and the usual cerebral symptoms.

The *treatment* is purely symptomatic.

DISEASES OF THE SPINAL CORD.**Define spinal meningitis, and give the causes and pathology.**

Spinal meningitis is an inflammation of the spinal meninges.

Causes.—Injuries, vertebral caries, exposures to wet and cold, tuberculosis, epidemic cerebro-spinal meningitis, extension from cerebral meningitis, exanthemata, tetanus, chorea, etc.

Pathology.—The pia mater is thickened, opaque, hyperæmic, and studded with ecchymoses; the dura mater is congested; the space between is filled with a sero-fibrinous or purulent exudation; the exudation is most abundant posteriorly, but it usually envelops the cord; the spinal cord may be pale and anæmic or hyperæmic and softened; the roots of the nerves are generally involved; recovery may occur from absorption of the exudation, but the inflammation generally becomes chronic.

Give the symptoms.

When associated with cerebral meningitis the symptoms are less distinct than when it is uncomplicated. Severe pain in the back, at first located, later diffused; pressure increases; patient keeps back rigid; opisthotonos may occur; chill, followed by fever, nausea, and vomiting; convulsive muscular twitchings; abdomen retracted; constipation; skin hyperæsthetic; paralyses more or less complete, sometimes preceded by formication, tingling, and numbness; profuse perspirations. The chronic form generally succeeds the acute: the symptoms are similar, but less severe.

The acute form may terminate in death in twenty-four to thirty-six hours, but it usually lasts seven to ten days. Few cases recover; convalescence is slow. The chronic form runs a protracted course, and death may ensue from exhaustion.

It must be differentiated from myelitis, tetanus, muscular rheumatism, cerebro-spinal meningitis.

What is the treatment of spinal meningitis?

Rest, protection from noise and strong light, calomel, ice or counter-irritation to the spine, anodynes and narcotics, ergotin and belladonna, iodide of potash, warm baths, nourishment, stimulants if the heart flags. In chronic cases counter-irritants, warm douches, iodide of potassium and mercury; galvanic current to prevent muscular atrophy.

Define acute myelitis, and give the etiology and pathology.

Acute myelitis is an inflammation of the substance of the spinal cord.

Causes.—Traumatism, exposure to extreme heat or cold, spinal meningitis, pressure from tumors or displaced vertebræ, the exanthemata, rheumatism, syphilis.

Pathology.—The cord is enlarged, softened, discolored, engorged, and ecchymotic; its anatomical elements are destroyed; the adja-

cent membranes are congested and adherent to the cord ; later fatty degeneration occurs, and the cord is converted into a yellow or white diffuent mass.

Describe the symptoms of acute myelitis.

Slight fever, pain in back, aggravated by pressure, constriction around the waist, pulse feeble and irregular, anorexia, cephalalgia, malaise, paraplegia, sensory and motor ; formications, followed by anæsthesia, restlessness, loss of control of bladder and rectum, priapism, muscular atrophy ; if disease is high up, dyspnœa and dysphagia ; constipation ; later, bed-sores, œdema of paralyzed limbs, spasmodic muscular twitchings and contractions, cystitis, nephritis, and pyelitis. The disease is progressive, and may become chronic. Death may occur in twelve or thirty hours or be delayed two or three weeks. Complete recovery is rare. The disease must be differentiated from acute spinal meningitis, cerebro-spinal meningitis, spinal hemorrhage, and tetanus.

What is the treatment of acute myelitis ?

Rest, support and nourish the patient, hot-water bags to spine, ergot, belladonna, diuretics, cathartics ; treat symptoms and avoid complications.

Give definition, causes, and pathology of infantile spinal paralysis.

Infantile spinal paralysis, or acute anterior poliomyelitis, is an inflammation of the anterior horns of the gray matter of the cord. It occurs mostly at from six to fourteen months, rarely later than the fourth year. It is a motor paralysis.

Causes.—Injuries, exposure to cold, exanthemata, sometimes obscure.

Pathology.—There is inflammatory softening of the diseased portion of the cord, with medullary hyperæmia and vascular exudations ; the anterior roots of the spinal nerves are shrunken, atrophied, and degenerated ; the vessels are enlarged and their walls thickened. The muscles involved undergo fibroid changes and atrophy, the tendons atrophy, the bones become flexible.

Give the symptoms.

Commences suddenly. Fever, vertigo, cephalalgia, restlessness, nausea, vomiting, sometimes delirium, eclampsia, and coma ; pain in the back ; paralysis, sometimes without any premonitory symptom, sometimes following a convulsion. Often a child goes to bed

well and awakens with paraplegia: if it commences in one leg, the other is soon affected; it may attack all four extremities; the arms are rarely attacked alone. It reaches its height in from ten hours to six or seven days, and in about two weeks begins to diminish. The affected muscles become flaccid and attenuated, and are apt to atrophy. Tendon reflexes are lost, body surface cold and purplish, general health good; there may be loss of power over bladder and rectum.

Prognosis good.

Differentiate it from progressive muscular atrophy, temporary infantile paralysis, myelitis, rickets, and hemiplegia.

Give the treatment of infantile spinal paralysis.

Rest, nutritious diet, strychnia, iron, arsenic, quinine, phosphorus, cod-liver oil, massage, friction, shampooing, galvanism, saline and thermal baths.

Define spina bifida, and give the causes and pathology.

Spina bifida, or hydrorrhachis, is a congenital tumor on the vertebral column, usually in the sacral portion, and is caused by a protrusion of the spinal meninges through an opening in the spinal canal. The tumor consists of the membranes of the cord filled with cerebro-spinal fluid and covered with normal or atrophied integument, or none at all; it may be a mere protuberance or a large growth, depending upon the size of the opening.

What are the symptoms?

The skin is discolored and red. Pressure on the tumor causes pain and may produce tetanic spasms. Large tumors are apt to burst or become gangrenous, followed by purulent meningitis and death. With small tumors children may thrive, but paralysis of the bladder, rectum, and lower extremities follows, ending in death. In some cases the disease complicates congenital hydrocephalus, ectopia of the bladder, and other deformities.

What is the treatment of spina bifida?

Protect the tumor from pressure and injury. Various surgical methods have been attempted, as evacuation, injections of iodine, amputation where pedunculated, pressure, etc., but so far without marked success. Some few cases, where the tumor was very small, have attained adult life, but generally these children live but a few *days after birth*.

FUNCTIONAL NERVOUS DISEASES.

Define eclampsia, and give the causes in children.

Eclampsia, or convulsions, consists in general or partial clonic twitchings of the muscles, attended with more or less unconsciousness.

Causes.—Idiopathic: compression of head during delivery, pathological changes in the brain, alcohol, narcotics, insolation, fright, anger, anxiety; intestinal irritations of all kinds, acute febrile diseases of all varieties, heredity, external irritants, and injuries. The disease occurs most frequently during infancy and the first years of life. The attack may be single or multiple.

Describe the symptoms.

In the milder form the child sleeps with half-closed eyes, showing the white sclerotic only; facial muscles contracted; breathing rapid, irregular, superficial, or sighing; the limbs tremble and twitch; the legs are drawn up on the abdomen, hands clinched, toes spread out: from this sleep the child awakens with a frightened cry and evidences of distress, and after a stool or vomiting and the expelling of flatus it generally rests quietly: if these attacks are frequently repeated, feverish conditions and emaciation are apt to supervene.

The severer type is usually preceded for a time with these milder symptoms, only in a more aggravated form; but suddenly a paroxysm occurs: the child becomes unconscious; the eyes are squinted, rolled up, or fixed and staring; the facial muscles twitch, the teeth are exposed, there are snapping of the jaws and gnashing of the teeth. The convulsion now becomes general; the muscles of the back are in tonic contracture or tetanic twitchings; the extremities thrash around; respirations are irregular or stop from spasmus glottidis, in which case death will occur if the spasm does not subside; bleeding from mouth and nose from impeded respiration or injuries; involuntary evacuations; heart contracts; anæsthesia of skin. The paroxysm is of short duration, and is followed by exhaustion and a semi-comatose condition, with anorexia, fever, and injected eyes.

The *prognosis* is generally good, except in very young children.

It must be distinguished from epilepsy and chorea.

The sequelæ liable to occur are strabismus, amaurosis, deafness, imbecility, paralysis.

are involved, breathing is interfered with, followed by symptoms due to imperfect aëration of the blood; the heart is seldom affected; the tongue is often wounded by the teeth; involuntary evacuation of the bladder and rectum; foaming at the mouth: as the paroxysm subsides perspiration breaks out, the child sighs, and stares about bewildered, then goes to sleep, from which it awakens with a headache and fatigued.

The paroxysms differ in degree. In the mildest form—*petit mal*—there may be merely a momentary loss of consciousness. In the severe form—*grand mal*—the symptoms may be so severe as to cause bodily injury, resulting in death. In *petit mal* the attacks return repeatedly through the day, in some cases several times an hour; in *grand mal*, about one a week. The general health depends upon the severity of the disease.

Epilepsy is chronic, but the frequency of the attacks diminishes with age. The attacks cease during acute diseases, but are aggravated in chronic diseases. Recovery is rare. The disease must be differentiated from hysterical convulsions, reflex convulsions, syncope, organic brain disease, uræmia, opium-poisoning, malingering, etc.

Give the treatment of epilepsy.

During the attack use means to prevent the child from injuring himself: dashing water in the face will sometimes revive him. An impending attack may sometimes be aborted by inhalations of chloroform, amyl nitrite, or a dose of ammonia or ether. Between the attacks seek the cause and remove it if possible, regulate the diet, and give tonics. Drugs indicated: nitrate of silver, oxide of zinc, ammoniate and sulphate of copper, opium, digitalis, belladonna, bromides, strychnia, cannabis Indica, cocaine, stramonium, arsenic, hyoscyamus, cod-liver oil.

Describe *suctus voluptabilis*.

By *suctus voluptabilis* is meant the habit that some children have of sucking the thumbs, fingers, backs of the hands, and toes, and the hands, cheeks, or necks of their companions. If the habit is continued, pain and spinal deformity from the unnatural position of the head and arm, delayed mental development, and even idiocy, may result.

It is difficult to break up this habit, but as the child grows it will often abandon it of itself.

DISEASES OF THE MIND.

What diseases of the mind are met with in children.

Imbecility and idiocy quite often, insanity very rarely.

Describe idiocy and imbecility.

Idiots have small heads, retarded bodily growth, are often deaf, unable to speak, greedy, filthy in their habits, more animal than human. In a milder form they are capable of acquiring certain habits and can be trained. In the mildest form, or imbecility, the size of the head and body are about normal, but some sense is blunted, and they are often, in addition, deaf-mutes.

Treatment can only avail in the milder cases, and here it is purely educational. The severe types rarely survive many years.

Describe insanity in children.

This is a very rare affection. In its mildest form the children are excitable, talkative, and vain, and subject to shameless and violent acts; in a more severe form there are marked confusion of ideas and loss of reflective ability; in the severest form there is marked mania, terminating in paralysis and imbecility.

The *prognosis* is generally favorable.

These cases should be treated in an asylum.

DISEASES OF THE EYE.

Describe the most frequent congenital diseases of the eye.

Epicanthus: a fold of skin passing from the root of the nose over the inner angle of the eye; the root of the nose is flattened, the skin is loose and can be picked up in a fold; it is usually bilateral. The deformity does not interfere with vision, usually disappears after a few years, or can be corrected by surgical interference.

Cyclopia: both eyes united in one; occurs in monsters who do not live.

Coloboma iridis: cleft of the iris, usually downward or down and in; the edges generally diverge, with the base downward; in some cases there is merely a fissure; the edges dilate and contract; it may occur in one or both eyes. Complicating it are frequently found hare-lip, hypospadias, splitting of the upper lid, oval cornea, cataract, etc.

Irideremia: absence of the iris occurs in one or both eyes, usually symmetrical; it induces near-sightedness, rolling of the

eyes, and partial closure of the lids; also inflammations of the cornea, conjunctiva, etc.; blindness is rare.

The *treatment* is by colored glasses or artificial diaphragms.

Cataract, nuclear: a sharply-defined, grayish-white point in the centre of the lens, surrounded by a brighter zone; usually found in both eyes, and complicated with irideremia or coloboma. White points with radiating lines sometimes develop in the lens or capsule, obscuring vision, but not destroying it.

Atresia pupillaris congenita: congenital closure of the pupil from continuance of the pupillary membrane after birth; it consists of thin shreds or loops of tissue attached to the anterior surface of the iris, which it resembles in color. These must be distinguished from iritic adhesions.

DISEASES OF THE EAR.

Describe the most frequent malformations of the ear.

Defectus auriculæ: the auricle may be very small or completely absent upon one or both sides, causing defective hearing.

The only *treatment* is to hide the deformity by dressing the hair or wearing artificial ears: plastic surgery is of no service.

Malposition of the ears: they may be pressed against the head or stand out at right angles. The first calls for no interference; the second can be corrected by binding the ears back against the skull for a few weeks.

Atresia meatus auditorii: closure of the meatus auditorius; sometimes the osseous canal is absent or its mouth is closed by tissue; generally complicated with some defect of the auricle; usually but one ear is affected; the hearing is abolished.

For the bony occlusion there is no *treatment*; for the membranous, surgical interference: remove the membrane and keep the canal patulous with tents.

Define otitis externa, and give the etiology.

Otitis externa is an inflammation of the meatus auditorius. The most frequent causes are scarlet fever and measles, eczema, and other eruptions on the scalp, injuries, foreign bodies, irritating discharges, etc.

Describe the symptoms and treatment of otitis externa.

Otitis externa is erythematous, catarrhal, or phlegmonous. In the *erythematous* form the meatus is reddened and coated with brown-

ish cerumen: this cerumen dries into crusts; the meatus desquimates; it is painless. In the *catarrhal* form there is first itching, then pain, followed by a yellowish-white discharge, which later has a sour odor; the discharge is more or less profuse, after a few weeks ceases, becomes cheesy, and the cerumen reappears. The discharge erodes the auricle. The lining membrane of the meatus swells and bleeds easily. Deafness attends this condition. The disease may become chronic, in which case it is usually absent in the summer, but returns in the winter: the discharge is glairy, mucous, or purulent, and polypi sometimes form; it rarely attacks both ears.

The *prognosis* depends upon the severity of the attack and the constitution of the child.

The simple form generally recovers without *treatment*. The treatment at the commencement should be with injections of warm water two or three times daily, and stuffing the ear afterward with cotton; later, astringents may be used—alum, silver nitrate, or boric acid in solution, a few drops put in the ear night and morning after syringing. If no cerumen appears, cod-liver oil with iodine dropped in the ear is of service. Build the patient up with cod-liver oil, iron, etc.

Describe otitis externa phlegmonosa.

Abscesses of the meatus only occur in the anterior part. There are redness, swelling, and pain, slight at first, in a few hours becoming excruciating, and aggravated by motion of the jaws, so that the child avoids speaking, chewing, or swallowing. Infants will pull at the ear. The swelling closes the meatus. Fluctuation appears, and upon evacuation of the pus pain ceases. Suppuration continues for a few days, followed by complete resolution.

The *treatment* consists in allaying pain by opium or morphine, warm applications to the ear, and an early incision.

Describe catarrh of the middle ear.

Catarrhal inflammation of the mucous membrane of the middle ear is generally transmitted from the Eustachian tube to the tympanum, and acts like inflammations of mucous membranes in other locations. It often occurs in tuberculous children. It runs a chronic course. Its chief symptom is steadily-increasing deafness, which in the beginning is temporarily relieved by hawking, sneezing, vomiting, and catheterization of the Eustachian tube. Inspection through a speculum gives only negative results.

Its *treatment* consists in operations upon the tonsils, uvula, and fauces, and catheterization of the Eustachian tube; blisters behind the ear are sometimes useful. General tonic treatment.

Describe otitis interna.

Otitis interna, or periostitis of the middle ear, is the most important and dangerous of all diseases of the ear. It begins suddenly, and generally in one ear, with intense pain of a cutting, boring character, which spreads to the temple, back of the head, neck, and jaw; it steadily increases, and may cause convulsions; it is worse at night, and aggravated by all movements and noises: there is buzzing in the ear, followed by deafness. The general symptoms are fever, rapid, hard pulse, general malaise, cold sweats, thirst. Young infants are restless, fretful, pluck at the ear, rub the head on the pillow, cry as if in pain, and make the loudest outcries when pressure is made on the ear. Examination of the ear is negative. The disease terminates by escape of the pus through the tympanum, Eustachian tube, or mastoid cells, carrying with it the ossicles and portions of necrosed bone, and is followed by total or partial deafness, or death from convulsions or purulent meningitis.

The *causes* predisposing: tuberculosis; exciting: exanthemata, particularly scarlet fever, injuries, foreign bodies, etc.

The *treatment* consists in relieving the pain with opium—cautiously in young children—belladonna, cocaine locally, also steam, plain or from chamomile tea, hot fomentations, leeches; evacuate the pus if possible—*i. e.* puncture the tympanum. After discharge of the pus syringe the ear every two or three hours with warm water, plain or medicated with boric acid, carbolic acid, etc.; for the removal of the crusts, sweet oil or almond oil. In chronic cases peroxide of hydrogen to cleanse, followed by insufflations of boric acid or injections of solutions of alum, sulphate of copper, etc. General tonics.

Describe briefly foreign bodies in the ear and their treatment.

Children will put all sorts of small objects in the ear, and insects will creep or fly into the canal. The symptoms attending the presence of these foreign bodies are pain, inflammation, tumefaction, and otorrhœa; the object can generally be seen, or felt by a probe carefully introduced. For its removal a stream of warm water is often sufficient; if this fails, a hook, ear spoon, curette, or forceps will generally succeed. In very restless children chloroform will facilitate the removal. The movements of insects can be stopped

by dropping sweet oil or glycerin into the ear. The otorrhœa generally disappears without further treatment.

DISEASES OF THE KIDNEYS.

Describe the commonest malformations of the kidneys found in children.

In some cases but one kidney is found; its position is normal. The horseshoe kidney is found, consisting of two normal kidneys united by renal tissue below. The hiluses of the two kidneys may be united anteriorly into one. Floating kidney is generally associated with malformations elsewhere, when it is congenital; if acquired, it may be due to injuries or to diseases causing shrinkage of the surrounding fat. Entire absence of the kidneys never occurs.

Describe uric-acid infarction of the new-born.

This is a physiological condition found in the majority of children dying between the second and tenth day, though it may be found as late as six weeks. Uric acid is the result of tissue-oxidation, and its accumulation in the kidney is due to the fact that there is not sufficient water to wash it out. In the pyramids are found golden-yellow streaks formed of a reddish powder consisting of amorphous lithates, uric-acid crystals, and epithelium from the straight tubules.

It presents no *symptoms*, except that occasionally in such children a red powder will be found in the diapers.

Define acute nephritis in children, and give the causes.

A tubular inflammation of the kidneys attended by changes in the urine and dropsy.

Its chief *causes* in children are scarlatina and diphtheria; it may also complicate measles, typhoid, pneumonia, rheumatism, diabetes mellitus, etc.

Describe the morbid appearances.

The kidneys are enlarged; the capsule can be easily removed; the enlargement is due to increased bulk of the cortical substance; the surface is smooth and mottled; the color pale, with spots of red vascular engorgement, or dark purple with ecchymotic spots. The cut surface is moist, and yields a tenacious, bloody serum containing hyaline casts, epithelium, and blood-corpuscles. Later, pale yellow points appear, and finally the kidney is uniformly yellow. The

blood-corpuscles in the capillaries disintegrate and are absorbed or washed away, and the casts in the tubules undergo fatty degeneration. The urine is decreased in quantity—at first dark-red, later clear yellow or turbid—and contains albumin and casts. Dropsical effusions occur in the peritoneum, pleura, and pericardium, and also inflammatory exudations, especially in the pleura.

Give the symptoms of acute nephritis.

Anorexia, nausea, vomiting, cephalalgia, fever, malaise, œdema of the face and lower extremities; in a few hours general anasarca, diminution or suppression of the urine, which when passed consists of but a few drops, dark red, concentrated, and is attended with pain, or the urine may not be diminished or changed in appearance; lumbar pains. The urine at first is decreased in quantity, dark colored, has high specific gravity, and contains albumin and small hyaline, granular, epithelial, nucleated, and blood casts; later, the quantity increases, the specific gravity decreases, the albumin is diminished, and fat casts with renal epithelium and free fat-globules are found, sometimes also pus-cells. Dropsical effusion into the peritoneum gives abdominal distension, percussion dullness, fluctuation; into the pleura, labored breathing, displaced apex-beat, percussion flat, auscultation absence of respiratory sounds, bulging of ribs, loss of motion on affected side; into the pericardium, irregular, small pulse, dyspnœa, præcordial dullness, inability to remain in the recumbent position, anxious countenance; uræmic symptoms, cephalalgia, amaurosis, deafness, delirium, coma, terminating in death.

Death may result from exhaustion, suffocation, or uræmia, or recovery may follow after a slow convalescence. Very rarely does the disease in children run into the chronic form.

The nephritis may terminate in death before the dropsies appear, or a non-nephritic œdema may occur.

What is the treatment of acute nephritis?

Prophylaxis in diseases that nephritis is liable to complicate. For the disease itself, rest in bed, an even temperature, milk diet, cupping the loins, followed by poultices, diaphoretics; jaborandi or pilocarpine hypodermically; vapor or hot-air baths; diuretics, digitalis, potass. acetat., citrat., or carbonat., sweet spirits of nitre; calomel, elaterin, podophyllin, senna, jalap, colocynth, opium, morphine, chloral, chloroform, camphor. Treat the complications. During convalescence a general tonic treatment.

Describe renal calculi in children.

Renal calculi of large size constitute a very rare affection in children. They are usually of lithic-acid formation.

The *symptoms* are similar to those attending the same disease in the adult: pain, colic, pus and sometimes blood in the urine, and the passage of concretions.

The *treatment* consists of the drinking of large quantities of water to dilute the urine, so as to prevent the growth of the calculus and to wash it out of the kidney.

Describe renal tubercles in children.

Miliary tuberculosis of the kidneys occurs in conjunction with the disease in other organs, but produces no symptoms directly applicable to the kidneys. It often occurs by extension of the disease from the testicle. The kidney is enlarged and its surface nodular. Suppuration, cheesy degeneration, and the formation of cavities may be the results.

The *prognosis* is bad.

The only *treatment* is tonics and cod-liver oil.

Describe renal cysts in children.

Cysts are frequently found in the cortical substance of the kidney of varying sizes, and containing thin, clear serum, which yields albumin, urates, and lithic acid. They are supposed to be due to occlusion of the urinary tubules by uric-acid infarctions, calcareous concretions, exudative casts, and pressure from extravasations.

DISEASES OF THE BLADDER.**Describe the most frequent malformations of the bladder.**

Absence of the bladder is extremely rare. When it occurs the ureters terminate in the navel, rectum, vagina, or urethra. Ectopia of the bladder is a congenital condition of absence of the anterior wall of the bladder and abdomen covering it, and consequent exposure of the posterior bladder-wall and mouths of the ureters. It may be of any degree, from a small opening to a fissure from the umbilicus through the external genitals into the anus. The skin surrounding the opening is inflamed and excoriated; the upper portion of the mucous membrane lining the bladder is dry and hardened, and the lower portion is sodden and excoriated. The patients emit a urinous odor. The cause of this deformity has received various explanations: failure of union of the abdominal

parietes, arrest of development, bursting of the bladder from impermeability of the urethra.

The *treatment* is by plastic surgery: where this is impossible or unsuccessful, the application of some one of the many apparatuses that have been invented to correct or mitigate this deformity. People with this deformity, even in an extreme degree, have lived to middle life.

Define cystitis, and give the causes and pathology.

Cystitis—catarrh of the bladder—is an inflammation of the mucous membrane lining the bladder. It is very rare in children.

Causes.—Traumatism, calculi, drugs, exanthemata, and extension of a urethritis.

Pathology.—The mucous membrane is inflamed, injected, and its glands enlarged and filled with pearly masses; later, the mucous membrane is thickened, of a grayish-brown color, and the mucus increased; excoriations may occur and wounds from calculi and foreign bodies.

Give the symptoms of cystitis.

Pain and tenderness in the region of the bladder, rectum, and urethra; dysuria; the urine is dark, cloudy, sometimes bloody, and contains mucus and pus: there may be distension of the bladder, ischuria, fever, and typhoid symptoms. In diphtheritic cystitis shreds of false membrane are passed in the urine.

The *prognosis* depends upon the cause; that from drugs is the simplest, that from calculus the severest.

The *treatment* consists in removing the cause. Mild aperients, mucilaginous drinks, laxatives, anodynes, milk diet, hot baths, warm fomentations, the catheter. In chronic cystitis the catheter must be used regularly, and the bladder washed daily with solutions of carbolic acid, salicylic acid, tannin, quinine, etc., and internally citrate or acetate of potash, benzoate of soda or ammonium, La Fayette mixture, etc.

Describe hernia of the bladder.

This may be congenital or due to injury, straining, etc. It may occur in the inguinal or femoral regions, or in the vagina. It may occur alone or carry intestine with it. Removing the urine by catheter will cause the tumor to disappear. The urine will be *offensive* and ammoniacal.

The *treatment* consists in reducing the hernia and supporting it by apparatus.

Describe ischuria.

Retention of urine generally occurs in very nervous children, due to spasm at the neck of the bladder.

The *symptoms* are restlessness, pain, loss of appetite, refusal of all liquids, distension of the hypogastric region. Some children will not pass any urine for twelve hours without any apparent distress.

The *treatment* consists in warm baths, warm fomentations over the hypogastric region; the passage of the catheter, or even a long silver probe, will sometimes be sufficient.

Define enuresis.

Syn.—Incontinentia urinæ, Mictio involuntaria.

An involuntary evacuation of the bladder, observed most frequently between the third and tenth years. May occur during sleep only (enuresis nocturna), during waking hours (e. diurna), or both when asleep and awake (e. continua). Recovery may be spontaneous or the result of treatment. It sometimes persists into adolescence.

Mention the causes of enuresis.

Predisposing: general ill-health. Actual: atony of sphincter vesicæ, exalted action of the detrusor, chemical alterations of urine, cystitis, calculus in bladder or kidney, polyuria, phimosis, preputial adhesions, urethritis, vaginitis, masturbation, polypus at meatus urinarius (in girls), rectal polypus, fissure ani, oxyuri, constipation, psychic.

Give the treatment of enuresis.

Attention to general hygiene and diet; correct abnormal conditions of urine; restrict liquids at evening meal; evacuate bladder before retiring, and perhaps awaken patient for same purpose once or twice during night. Remove any apparent cause—e. g. phimosis by circumcision or dilatation of prepuce; internally nux vomica, ergot, belladonna, atropine sulphate, sodium bromide, camphor, rhus toxicodendron may be given; externally electricity, galvanism, faradism—positive pole over sacrum, negative over hypogastrium.

Define vesical calculi, and give the causes and pathology.

Concretions formed by the precipitation of certain substances from the urine.

Causes.—The disease is quite frequent in children, especially boys: in some the uric-acid infarction forms a nucleus for the stone; in others the stone grows by the deposit of phosphates, especially in rickets.

Pathology.—The uric-acid, oxalate-of-lime, and phosphatic calculi are found; those composed of cystin and carbonate of lime are rare. The appearance and chemical composition of these stones are the same as in the adult. The first two are the most common. Usually but one stone is found. Cystitis generally exists, but not always.

Give the symptoms and treatment of vesical calculi.

Pain, aggravated by violent exercise, and which disappears on lying down, radiating to the end of the urethra, and causing the child to pull upon the prepuce, thereby inducing masturbation and redundancy of the foreskin; dysuria, sometimes hæmaturia; the stream of urine is interrupted, and the pain most intense with the passage of the last few drops. The passage of the sound confirms the diagnosis. Sometimes the calculus can be felt *per rectum*.

The disease is chronic: small calculi may pass through the urethra, but large ones will continue to grow; may produce chronic cystitis, and may carry the patient off with uræmia or nephritis.

The *treatment* consists in the removal of the stone. This may sometimes be accomplished, with small stones in the female, through the urethra, but generally lithotomy or crushing will be required: children bear lithotomy well. The utility of solvents is doubtful. After the removal of the calculus the treatment should be preventive against a new growth forming.

DISEASES OF THE PENIS.**Describe congenital phimosis.**

The prepuce cannot be retracted because of lengthening and tightening; sometimes not even the meatus urethræ can be exposed. This condition to a certain extent is physiological with all boys, but disappears with age. The results are balanitis, with preputial swelling and adhesions, pain and restlessness, especially during micturition, sometimes gangrene.

The *treatment* is dilatation, breaking up adhesions, cleanliness, or circumcision.

Describe congenital paraphimosis.

From arrested development the prepuce, instead of growing down and covering the glans penis, remains behind the corona in coalescence with the glans. It frequently complicates hypospadias and short frænum.

Describe congenital closure of the meatus urethræ.

The occlusion may be due to impervious urethra or a membrane growing across the meatus. In the latter simple puncture corrects the trouble; in the former a more tedious operation is demanded or the formation of an artificial opening into the bladder.

Describe hypospadias.

Hypospadias is a congenital malformation due to arrested development in which the urethra terminates at some point on the under side of the penis instead of at the end. In the extremest degree the entire urethra may be open and the scrotum fissured, causing difficulty in deciding the sex, especially if the testicles have not descended. The results are an abnormal direction to the stream of urine, or in extreme cases incontinence with all its evils, and later inability to place the semen in the vagina.

Surgery is the only available *treatment*, and then only in the mildest cases, and repair is impeded or rendered unsuccessful from the continual irritation of the urine.

Describe epispadias.

Epispadias is a congenital malformation due to arrested development, in which the urethra terminates at some point on the dorsum of the penis instead of at the end. In the extremest form the penis is fissured its entire length, and has associated with it ectopia of the bladder. The results are similar to those pertaining to hypospadias, and its *treatment* as unsatisfactory.

It occurs much less frequently than hypospadias.

Describe balanitis.

Balanitis, or inflammation of the prepuce, is produced by retained smegma, foreign bodies, dirt and worms beneath the foreskin, masturbation, and injuries.

The *symptoms* are redness, swelling, and œdema of the prepuce, the meatus of which is contracted and the edges glued together;

pain on retraction; the glans is inflamed, is covered with pus, and is cheesy. Sometimes the preputial orifice is closed, causing interference with, and intense pain during, micturition. Sometimes gangrene and sloughing result.

The *treatment* consists in removing the cause, strict cleanliness, and anodyne and astringent lotions; very rarely is circumcision necessary.

Describe acquired paraphimosis.

A condition in which the prepuce is drawn back and constricted behind the corona glandis. The results are congestion, œdema, and deformity of the glans. The trouble may be recovered from spontaneously.

The *treatment* consists in returning the foreskin to its proper position: the parts are thoroughly lubricated, the prepuce is grasped, behind the glans, between the index and middle fingers of the two hands and drawn forward; at the same time the two thumbs push the glans backward, when with a little perseverance the prepuce will glide back over the glans. If the glans is very much swollen, a stream of cold water will reduce it. No after-treatment is needed.

Describe masturbation.

Masturbation, or self-abuse, in children is most frequently acquired from companions or may be induced by irritations that cause the child to handle the parts, or from all things that cause erections. The habit is practised by both sexes, but more especially by boys. The results in boys are an increase in size and supersensitiveness of the organ, in girls a vaginitis; in both emaciation, anæmia, flabby muscles, nervous phenomena, and bodily and mental retardation.

In the *treatment* drugs are of no service: moral influence, healthy exercise, a non-stimulating diet, baths, a hard mattress, light bed-covering, and continual surveillance are the only remedies. In some cases punishment and the application of escharotics to the parts will be necessary.

DISEASES OF THE TESTICLES.

Describe cryptorchidism.

A condition in which one or both testicles have failed to descend into the scrotum, but remain in the abdomen or in the inguinal

canal. It is of very frequent occurrence, especially in seven months' children. The testicles usually descend during the first weeks of life or at puberty. They only present symptoms when constricted or injured while in the canal, pain and inflammation being the result. Their chief diagnostic significance is in the discrimination of cryptorchidism, incomplete hernia, and hydrocele of the cord; high up with cryptorchidism there is no testicle in the scrotum, but in the canal is a firm, resisting, non-fluctuating, opaque mass, which can be drawn down and isolated, and pressure on which causes pain. Impotence does not attend this condition.

Treatment is hardly necessary. The only indication is gentle traction on the cord, but it must be practised with caution.

Describe the various forms of hydrocele met with in children.

Congenital hydrocele, failure of the tunica vaginalis to close, consequently free communication with the peritoneal cavity: the tumor quickly disappears by emptying its serous contents into the abdomen.

Funicular hydrocele: the upper part of the tunica vaginalis has been shut off from the testicle below, but remains pervious above. Pressure displaces the fluid.

Infantile hydrocele: the funicular process is impervious; the fluid collects in the tunica vaginalis. Pressure will not displace the fluid.

Encysted hydrocele of the cord: a fluctuating tumor in the course of the cord above the testicle.

Give the causes and symptoms.

Non-closure of the tunica vaginalis and inflammatory processes induced by injuries or disease.

The *symptoms* are a tumor of the scrotum, tense, fluctuating, dull, translucent, reducible in the congenital and funicular forms, but quickly reappears, growing from the bottom upward; in the congenital made larger and more tense by abdominal pressure, as during coughing, straining, etc.

Give the treatment of hydrocele.

In very young children repair often occurs spontaneously. In the congenital and funicular types reduction of the tumor and the constant pressure of a well-fitting truss will often effect a cure, or the fluid may be removed by a canula, hypodermic needle, or acupuncture, and afterward a truss applied. In the infantile and

encysted types evaporating lotions, especially sal ammoniac or iodine, may cause the tumor to disappear, or the fluid may be removed with a hypodermic needle. Relapses sometimes occur.

DISEASES OF THE FEMALE GENITALS.

Describe the malformations of the female genitals.

Through arrested development of one or both canals of Müller are produced the following: entire absence of uterus and vagina; absence of uterus, vagina normal; uterus bicornis, vagina and cervix normal; uterus unicornis, the corresponding ovary normal; through abnormal union of the canals of Müller are produced uterus bicornis, uterus well developed, but divided; double uterus, with a single or double vagina and hymen; uterus bilocularis, a central septum in the cavity of the uterus; the ovaries may be absent on one or both sides or displaced; atresia vaginæ may be congenital or acquired; imperforate hymen.

None of these conditions produce any *symptoms* until puberty is reached and menstruation should be established, or in some until marriage, when the interference with coitus or the non-appearance of pregnancy causes an examination.

Treatment can only be applied to the external genitals.

Give the symptoms and causes of leucorrhœa.

The vulva, hymen, and vagina are inflamed, swollen, and tender; in extreme cases ulcerations occur, the insides of the thighs and perineum are inflamed and excoriated. A discharge issues from the vagina that may be thick and yellow, or thin, viscid, and mucous, or brown from admixture with blood; it generally possesses an offensive odor; its quantity varies; it dries into crusts on the labia majora. Urethritis may complicate.

The *course* is chronic.

Causes.—Gonorrhœal or syphilitic infection, masturbation, foreign bodies, oxyuria, diphtheria, exanthemata; exhausting diseases, as tuberculosis; bad hygiene and food.

Give the treatment of leucorrhœa.

Correct or remove the cause if that be masturbation or foreign body, etc.; strict cleanliness; syringe the vagina with warm or cold water, and apply lotions containing bismuth, lead, alum, *tan-nin*, or solutions of sulphate of iron, nitrate of silver, etc. Improve

the general condition by means of cod-liver oil, iron, the vegetable bitters, etc. Treat complications.

Describe vaginal hemorrhage.

This is of very rare occurrence, and usually consists of but a few drops of blood; where it occurs in babes a few days old the breasts swell and a milky fluid can be squeezed out. It must be distinguished from bleeding due to anal fissures.

If any *treatment* is needed, it must be by mild solutions of alum, tannic acid, or similar astringents.

Menstruation in some girls occurs very early, but gives its peculiar symptoms.

THE EXANTHEMATA.

SCARLET FEVER.

What is scarlet fever?

Scarlet fever is an acute, self-limited, highly contagious disease, with its chief lesions in the skin and mucous surfaces, and characterized by fever, rash, and sore throat.

What are the synonyms?

Scarlatina (Eng. and Ital.); Scharlach (Ger.); Scarlatine (Fr.); Escarlatina (Sp.).

What are the causes of scarlet fever?

Infection, either directly by contact with the sick or indirectly through the atmosphere, clothing, utensils, animals, food (milk), or water.

What are the predisposing causes?

Anything that lowers vitality.

At what period of the disease is greatest danger of infection?

During desquamation.

How many varieties of scarlet fever are there?

Five: scarlatina simplex, mitis, or benigna; scarlatina anginosa; scarlatina maligna; scarlatina sine eruptione; latent scarlatina.

Which variety is the most common?

Scarlatina simplex.

Into how many stages is scarlatina divided?

Four: incubation, invasion, eruption, and desquamation.

What is the average length of each stage?

Incubation, three to eight days—may vary from one to forty days; invasion, one to two days—may last only twelve hours; eruption, about nine to ten days; desquamation, fourteen days.

What is the average length of the disease?

From three to five weeks.

Give the symptoms of the stage of incubation.

Malaise and restlessness.

Give the symptoms of the stage of invasion.

Chilliness followed by fever, 104° F. or higher; skin hot and dry, face flushed, pulse frequent, throat sore, fauces red and dry; vomiting and prostration, with thirst and anorexia; epistaxis frequently; tongue coated, red at tip and edges, papillæ enlarged; muscular pains; severe frontal headache; lassitude, restlessness; respirations hurried; slight delirium at night; convulsions and coma in young children; peculiar changes in the blood-globules.

Describe the eruption of scarlet fever.

The eruption begins as minute, bright red, pin-head spots, separated by healthy skin; these gradually coalesce until the entire surface assumes a bright scarlet, boiled-lobster appearance; the tint may vary, but will be deepest in the centre of each spot. The color disappears on pressure during the first forty-eight hours, but returns as soon as the pressure is removed. The eruption produces intense itching and burning of the skin. It attains its height from the third to the fifth day, commences to fade from the fourth to the sixth day, from the oldest spots first, and has disappeared by the ninth to the tenth day.

What course does the eruption follow?

It will be found on the roof of the mouth some hours before it appears on the skin. On the skin it appears first on the front of the neck and upper part of chest; from these it spreads rapidly over the face, trunk, and extremities. It is most marked in the flexures of the joints. It may be irregular, and appear first on the extremities or appear on the face only. It follows the same course in fading, commencing at the root of the neck.

Give the prominent symptoms of the stage of eruption.

Slight convulsion in some cases, anorexia, thirst, constipation,

headache, restlessness, nocturnal delirium; the eruption with dry, rough, and itching, burning skin; sudamina in some cases, chiefly on the neck, chest, in the axillæ and groins; eyelids, hands, and feet sometimes puffy; strawberry tongue, a coated tongue with elevated papillæ; temperature rises as rash appears to 104° or 106° F. or higher; has morning remissions; falls as the rash fades. Pulse follows the temperature, 120 to 160 or higher; is variable and falls with the temperature. The throat is inflamed and dry, and covered with viscid, opaque mucus; the tonsils are ulcerated, sometimes suppurating; swallowing is difficult; submaxillary glands enlarged and tender. In some cases the conjunctivæ and mucous membrane of mouth and nose are inflamed; subcutaneous tissues of neck sometimes œdematous. The urine is febrile, and often contains albumin, blood, renal epithelium, and casts.

Give the symptoms of the stage of desquamation.

Rapid subsidence of all the symptoms. Pulse and temperature fall steadily, sometimes below normal. Epidermis peels off in large and small pieces, attended with intense itching. Urine increases in quantity, albumin disappears; renal and bladder epithelium still continues, and there may be renal casts. Throat symptoms are modified, but may last for some time.

What are the prominent symptoms of scarlatina anginosa?

The throat symptoms are intensely aggravated; diphtheritic patches often present. There may be ulceration and gangrene of the larynx and Eustachian tube. The glands and structures around the neck swell, suppurate, and slough. The nostrils are also involved. The breath is very offensive. Swallowing is extremely painful. The rash is delayed, and not always well marked. Uræmic symptoms. Symptoms of a low type: sordes, nausea, vomiting, diarrhœa, tympanites, marked prostration. Temperature continues high after rash fades.

What are the prominent symptoms of scarlatina maligna?

The nervous symptoms: prostration, restlessness, insomnia, muttering delirium, convulsions, coma, picking at the bed-clothes, subsultus tendinum. Pulse feeble, rapid, and irregular; circulation impeded; petechiæ. Rapid respiration. Skin cold or cold and hot alternately; clammy sweat. Uræmic symptoms. Tongue dry and brown. Death may occur in a very few hours, before the rash appears.

Give the prominent symptoms of scarlatina sine eruptione.

Fever and sore throat, but no eruption. This form is more usual in second attacks.

Give the prominent symptoms of latent scarlatina.

There is an absence of all symptoms except desquamation, albuminuria, and dropsy.

What are the complications of scarlet fever?

Acute desquamative nephritis, uræmia, dropsy without albuminuria, ulceration of throat, pleurisy, pericarditis, endocarditis, rheumatism, otitis and disease of the ossicula, producing meningitis, abscess of brain, facial paralysis, abscesses, chiefly of lymphatic glands, gangrene, keratitis.

Give the differential diagnosis of scarlet fever.

From small-pox, measles, rubeola, erythema.

What is the treatment of scarlet fever?

Quarantine; strict hygiene; milk and beef tea; cooling drinks, lemonade; sponge skin with solution of carbolic acid, Condy's fluid, camphor; inunctions of carbolized oil; salines for the bowels, aconite for the fever, belladonna for tardy eruption. For throat symptoms, sucking ice, inhaling steam, hot, moist applications externally; tr. ferri chlorid.; disinfectant applications to the throat; stimulants and nourishing diet. For kidney complications, dry cups to loins, followed by hot poultices; milk, diuretics, digitalis; pilocarpine, hydragogue cathartics; after acute symptoms, iron and quinine. For delirium and restlessness, bromides, chloral, morphine, and quinine. Treat other symptoms as they arise. In extremely malignant cases not benefited by treatment use stimulants freely, carbonate of ammonium, hot baths, supporting treatment.

MEASLES.**Give the definition and synonyms of measles.**

Measles is a highly contagious, self-limited, eruptive fever, attended by catarrh of the mucous membrane of the air-passages.

The *synonyms* are—Morbilli; Rubeola; Flecken (Ger.); Rougeole (Fr.); Rosalia (It.); Sarampion (Sp.).

What are the causes of measles?

Infection, direct contact with the patient or being in the sick-room. Contagiousness is most marked during the prodromal

period, diminishes during the eruption, and probably becomes extinct during desquamation.

Give the stages of measles, with the length of each.

Incubation may vary from six to fourteen days; invasion, three to five days; eruption, five to seven days; desquamation, four to seven days.

Give the symptoms of measles according to the stages.

Incubation has no symptoms. *Invasion*: lassitude, headache, backache, muscular soreness, chilliness, rigors or convulsions, slight fever, 101° or 102° F., restlessness; may have slight nocturnal delirium, coryza with sneezing, occasionally epistaxis, photophobia, eyes injected, lachrymation, eyelids inflamed, throat sore and inflamed, hoarseness, cough, dry râles, rapid respiration; may have vomiting, constipation, or diarrhœa. *Eruption*: rash appears about the fourth day, first on the hard palate, then at the roots of the hair, usually on the forehead; spreads over trunk and extremities; most marked on the back of the hands; very rarely it commences on the extremities; spreads over the body in from two to four days: the rash begins as small, scattered red points, slightly elevated and papular; these coalesce in crescentic patches; the color varies from light to dark red; fades on pressure, but quickly returns when the pressure is removed; vesicles, pustules, and petechiæ may form; as the rash fades a coppery discoloration remains; the rash begins to fade in thirty-six hours at the place where it first appeared. The temperature rises till the rash reaches its height, and has morning remissions; it falls rapidly from the fourth to the tenth day, and after one or two evening exacerbations falls to or below normal. Puffiness of face and hands; skin irritable; deafness, due to catarrh of Eustachian tube; tongue coated and moist; bronchial catarrh; diarrhœa and vomiting may persist; urine febrile, may have albuminuria and hæmaturia; mouse odor of breath and sweat. *Desquamation*: fine bran-like scales, smells like meal.

How many varieties of measles are there?

Four: morbilli vulgares or simplices; morbilli sine eruptione; morbilli sine catarrho; morbilli graviores, malignant, black, or hæmorrhagic.

Describe the rare forms.

Morbilli sine eruptione has the fever, catarrh, and other symptoms, but no rash. Morbilli sine catarrho has no catarrh, and

may have no fever, the characteristic rash being the only symptom. The malignant form may commence mild or severe, but soon assumes a typhoid character: great prostration, cold extremities, dry, brown tongue, sordes, picking at the bed-clothes, low muttering delirium, stupor; pulse rapid, weak, and irregular; eruption livid, purple or black petechiæ; hemorrhages from mucous surfaces; bronchitis, pulmonary congestion, or pneumonia may develop.

What are the complications and sequelæ of measles?

Croupous laryngitis, capillary bronchitis, chronic bronchitis, pneumonia croupous or catarrhal, phthisis acute or chronic; lobular collapse, acute tuberculosis, secondary meningitis, inflammation of eyes, nose, or ears; adenitis, diarrhœa, dysentery, acute Bright's disease, gangrenous inflammation of genitals.

Give differential diagnosis.

From small-pox, scarlatina, and roseola.

Give the treatment of measles.

Strict quarantine and hygiene; darkened room; avoid draughts; rest in bed; liquid diet; salines for constipation; for cough, liquor ammonii acetatis, vinum ipecac., and tinct. camphoræ comp.; for fever, aconite and liquor ammonii acetat.; if fever is very severe, tepid sponging and quinine or salicin; for restlessness, small doses of Dover's powder; for constriction of chest, hot poultices; for thirst, ice or iced drinks; for pruritus, tepid sponging and inunctions. Treat complications as they arise: if eruption suddenly recedes, mustard baths and hot drinks; in hemorrhagic form, quinine, mineral acids, tinct. ferri chlorid., turpentine; during convalescence, quinine, iron, cod-liver oil, change of air, salt-water baths; guard against cold—warm clothing, flannel next the skin.

RUBEOLA.

Give the definition and synonyms of rubeola.

Rubeola is a contagious eruptive disease of mild character and attended with slight pyrexia.

The *synonyms* are—German measles, Epidemic roseola, Rubeola scarlatinosa, Rubeola morbillosa, Rubeola notha, and Rubella.

Give the etiology of rubeola.

Contagion by close contact and in epidemics. It is contagious

during entire course. Most susceptible age, between two and fifteen years.

How many stages are there?

Four: incubation, invasion, eruption, and desquamation.

Give symptoms of stage of incubation.

Average length, fourteen to twenty-one days; may be as short as five days; no symptoms.

Give symptoms of stage of invasion.

Length, twenty-four hours or less to three or four days. Often no symptoms except slight malaise and fever. Sometimes, in epidemics especially, sore throat, coryza, lachrymation, nausea, anorexia, cephalalgia, temperature of 99° to 100° or 103° F. In connection with these, post-cervical adenitis with stiffness of neck and pain on movement of head.

Give symptoms of stage of eruption.

Average length, three days. Commences on face and upper part of chest; spreads thence over trunk, arms, and legs within twenty-four hours; palms of hands, soles of feet, and scalp usually exempt. The eruption consists of slight papules, varying in size from a pin's head to a pea, of irregular shape, but mostly circular, healthy skin between; color varies from pale rose to brown; ceases to spread in one or two days; is attended with slight burning and itching.

Give symptoms of stage of desquamation.

Lasts two to three days. The desquamation is very slight, and furfuraceous in character. It follows the course of the eruption. Slight pigmentation may remain for a few days.

What are the complications and sequelæ?

None. A transient albuminuria may exist.

Give differential diagnosis of rubeola.

From scarlatina and measles.

Give treatment.

Dietetic and hygienic only.

VARIOLA.

Give definition and synonyms of variola.

Variola is an acute, febrile, and highly contagious disease, charac-

terized by an initial fever, followed by a peculiar eruption, which is succeeded by a secondary fever.

The *synonyms* are: Small-pox (Eng.); Petite vérole (Fr.); Pocken (Ger.); Vaguola (Ital.).

Give the causes of variola.

Contagion through an abrasion of the skin or mucous membrane; by the breath, exhalations from skin; by clothing or utensils; and through the atmosphere.

How many stages are there?

Four: incubation, invasion, eruption, and desiccation.

Give the symptoms of stage of incubation.

Length, about twelve days; no symptoms except malaise.

Give the symptoms of stage of invasion.

Length, two to three days; sudden chill, followed by fever and perspiration; temperature may reach 104° or 106° F., morning remission; pulse, 100–140, full, bounding, incompressible; epigastric pain; nausea and vomiting; constipation or diarrhœa; pains in the back and over the body; cephalalgia; insomnia; throbbing carotids; face and conjunctivæ congested; great debility, with muscular tremors; anorexia; great thirst; tongue coated; dyspnoea. Sometimes marked impression of nervous system; sometimes sore throat and coryza. These symptoms usually subside when eruption appears.

Give the symptoms of stage of eruption of variola.

Length, about fourteen days; sometimes preceded by an eruption resembling scarlet fever. The characteristic eruption usually begins on the face, and spreads over the body in one to ten days. The symptoms attending it are—puffiness of face and scalp; skin red and tender; intense itching; if mucous membranes are involved, the inflammation is attended by pain and soreness of conjunctivæ, throat, mouth, genito-urinary tract. The fever moderates as eruption appears, but increases as suppuration begins. The eruption begins as a bright-red spot, slightly elevated; this increases to a papule with a flat top; this becomes a vesicle; by the fifth day umbilication occurs and pus develops; the adjacent skin becomes inflammatory. Pus increases, umbilication disappears, and the spot becomes round and pointed. By the ninth day the pus ruptures or *dries up*, forming a brownish scab, which comes away by the elev-

enth to the fourteenth day, leaving a red stain which lasts for some time; if the true skin is destroyed, pitting occurs.

Give the symptoms of stage of desiccation.

Length, from one to three weeks; general improvement in all the symptoms.

What are the other varieties of variola?

Discrete or mild: only a few pocks and mild symptoms.

Confluent: pustules coalesce, symptoms profound; severe complications jeopardize the patient's condition.

Malignant: symptoms quickly assume a low type, and may prove fatal before the rash appears; hemorrhagic form, with exhaustion and nervous prostration, delirium and coma, or there may be petechial, ulcerative, or gangrenous forms.

Benign: an abortive form; pocks dry up before pustules form.

Give some of the complications and sequelæ.

Pneumonia, pleurisy, bronchitis; peri- or endocarditis; glossitis, œdema glottidis, gastritis, enteritis, diarrhœa; abscesses, suppurative adenitis, gangrene of scrotum or labia; eczema, erysipelas; pyæmia, septicæmia; ophthalmia, ulceration of cornea; destructive inflammation of middle ear and nasal passages; cystitis; nephritis and pyonephritis; ovaritis, orchitis; hemorrhages from any organ; peritonitis; abortion.

Give the differential diagnosis.

From all the eruptive fevers, also meningitis, lichen, and secondary syphilis.

Give the treatment of variola.

Quarantine, hygienic and dietetic; to prevent pitting protect the parts from the air; mild laxatives; wet packs to reduce temperature; bromides for cerebral excitement; opium to relieve pain; alcohol for prostration; tonics of quinine, iron, mineral acids, etc. Treat the symptoms as they arise. Warm baths and inunction of the skin during desiccation.

VARIOLOID.

Give definition of varioloid.

Varioloid is small-pox modified by vaccinia, a previous attack of variola, or some peculiar disposition of the patient.

What are the symptoms?

The attack lasts from seven to ten days, incubation about two days, eruption from four to six days. There is no secondary fever, no characteristic odor, and the mucous surfaces are but slightly involved. Preceding the eruption a dark-red, large-spotted erythema appears on the skin. The eruption may not appear on these spots, but on the healthy skin. The eruption breaks out rapidly on the face, chest, and limbs, and papules, vesicles, and pustules will be found at the same time; the majority of the pustules do not become umbilicated; they never have the intense red areola of small-pox, and very few of them burst; instead, they quickly dry up; the crusts drop off, and leave red, slightly-depressed cicatrices. The vesicles dry up in their scales. Pitting is rare. The general symptoms are mild: the initial fever may reach 102° F. or even 105° F., but in a day or two falls to normal, and the patient feels so well that it is with difficulty he is kept in bed.

Give some of the complications and sequelæ.

Œdema of larynx and glottis, producing croupy symptoms, convulsions, and pneumonia. Sequelæ are rare; occasionally furunculosis or suppurating impetigo, with enlargement of the lymphatic glands.

What is the treatment of varioloid?

Quarantine, dietetic, and hygienic.

VARICELLA.**Give the definition and synonyms of varicella.**

Varicella is an acute infectious fever, characterized by a vesicular eruption.

The *synonyms* are—Chicken-pox, Swine-pox; *La varicelle* (Fr.); *Wasserpocken* (Ger.).

Give the cause of varicella.

A specific virus which is highly contagious; greatest liability before the fifth year; rarely occurs after the tenth year.

Give the stages of varicella.

Incubation, invasion, eruption, and desquamation.

Describe the stage of incubation.

Lasts from eight to ten days; no symptoms.

Give the symptoms of stage of invasion.

Length, twenty-four hours; anorexia, lassitude, chilliness, slight febrile movement, rarely over 101° F.

Give the symptoms of stage of eruption.

Appears within twenty-four hours after first symptoms. Commences as small hyperæmic patches, quickly followed by transparent vesicles varying in size from a pin-head to a split pea; they are unilocular, collapse when pricked, and leave no swelling or elevation of the skin. The eruption appears first on the back, and spreads rapidly over the chest and extremities, attaining its full development in a few hours. The mucous surfaces are invaded.

Give the symptoms of stage of desquamation.

It begins by the third day and lasts four to seven days. The contents of the vesicle becomes cloudy; the vesicle begins to dry in the centre; thin, brownish-yellow crusts form, become detached, and leave a faint red spot, which disappears in a few days. Occasionally pitted cicatrices permanently mark the seat of a few vesicles. Sometimes at the commencement of this stage a few pustules appear; they are accidental.

Give the complications and sequelæ.

None. Convalescence is rapid and prognosis good.

Give differential diagnosis.

From small-pox.

Give treatment.

Hygienic and dietetic, as in scarlet fever and measles; gentle aperients.

GENERAL DISEASES.

DIPHTHERIA.

Give the definition and synonyms of diphtheria.

Diphtheria is an acute, highly infectious, constitutional disease with local manifestations.

The *synonyms* are—Malignant sore throat; Angina maligna; Diphtheritis.

What are the causes of diphtheria?

Predisposing: bad hygiene, debility, certain diseases, as scarlet fever, measles, etc.; exciting: a specific poison.

Give the symptoms of a typical case.

Average incubation, two to four days; may be two weeks. Malaise, cephalalgia, feverishness, dysphagia, sometimes vomiting.

Invasion is gradual: increased malaise, chilliness, anorexia, nausea and vomiting, diarrhœa, epigastric pain, pyrexia, neck stiff, throat dry, hot, and tender; pricking sensation on swallowing; tenderness at angles of jaw; tongue white coat. As the disease progresses the constitutional symptoms are aggravated: temperature 103° – 105° – 107° F.; pulse increased, weak, compressible, may be irregular; its character indicates the severity of the disease. Patient feels sick and depressed. Urine is albuminous. Diarrhœa may continue. Heart is weakened. Typhoid symptoms with cyanosis may supervene. The local symptoms are generally referred to the throat, which is inflamed, swollen, and more or less covered with the diphtheritic membrane: this consists of small spots which coalesce; the color varies from white, gray, brownish to black; its thickness varies, and it may be soft or tough. If removed, a bleeding surface is left, on which a fresh deposit forms. The membrane may spread up into the nose, Eustachian tube, and ear, lachrymal duct and eye, or down into the larynx, trachea, or bronchi. Inflammation of submaxillary and cervical glands; neck swollen. If the disease extends into the nose, there will be a sanious discharge, excoriating the lip; if into the larynx, signs of stenosis will appear

Name and describe the different varieties of diphtheria.

Mild: low temperature; no albuminuria; rapid recovery; no sequelæ; may have an extensive exudate.

Inflammatory: high temperature; weak pulse; throat extensively involved—may ulcerate and slough; exudate may extend into larynx and bronchi; cervical glands enlarged; albumin in urine.

Insidious: symptoms mild at first, suddenly become severe, involving larynx.

Nasal: exudate starts in the nose; a sanious, foetid discharge escapes over the upper lip, excoriating it and causing it to swell; the exudate may extend through the posterior nares into the pharynx and larynx. Septicæmia and fatal epistaxis may occur.

Laryngeal: the exudate begins in the larynx, but may extend to the adjoining parts.

Asthenic: symptoms from the start may be of a low type, attended with extreme prostration; temperature 98° to 100° F.; pulse small, weak, irregular, compressible; heart weak; typhoid symptoms—brown tongue, sordes, delirium; exudate soft, may not be extensive.

What are the complications and sequelæ?

Albuminuria, with derangement of kidneys; hemorrhages from air-passages; purpuric spots; erysipelas; ear affections; pneumonia; paralysis, anæmia, uræmia.

From what must the disease be differentiated?

Follicular tonsillitis, scarlatinal sore throat, pharyngitis.

Give the treatment of diphtheria.

Strict quarantine and hygiene; nutritious diet and alcohol; quinine, bromides, antiseptics, tincture of the chloride of iron. For typhoid condition, supporting treatment, ammonia, bark, etc. Locally, antiseptics and stimulants as gargles or sprays. Treat other symptoms according to indications. During convalescence change of air, tonics, nutritious diet.

TYPHOID FEVER.

State what is typhoid fever, and give the synonyms.

Typhoid fever is an acute, infectious disease, characterized by a peculiar eruption, range of temperature, and stools.

The *synonyms* are—Enteric fever, Autumnal fever, Abdominal typhus (Ger.); Dothiéntérie (Fr.); Tifo-enterico (It.); Fiebre continua (Sp.).

What are the causes of typhoid fever?

Predisposing: bad hygiene, debilitated system, autumn, idiosyncrasy. Exciting: a specific poison which enters the system in milk, water, food, from the fingers, etc.

What are the symptoms of typhoid fever?

Incubation lasts from ten to fourteen days; malaise, diminished appetite. From the commencement of the fever the disease lasts about four weeks. During the first week the symptoms are—malaise, chilliness, headache, dulness, listlessness, photophobia, disturbed sleep, anorexia, nausea, vomiting, diarrhœa, epistaxis, general soreness, sometimes slight abdominal tympanites, with

tenderness and gurgling in right iliac fossa; tongue white coated, tip and edges red; toward the end of the week the stools are light yellow in color and of pea-soup consistency. During this week the temperature rises higher each night than the night before, and is lower in the morning than at night, but higher than the previous morning. By the seventh day the temperature reaches its highest point, and during the second week it follows a regular rise and fall each day. During the second week the countenance grows duller, eyes suffused, cheeks flushed, tongue more thickly coated, dejections thinner and offensive and more frequent, abdominal tenderness and tympanites increased, skin drier, peculiar odor to skin and breath, pulse increased, weak, and soft; the eruption appears on the abdomen and back from the sixth to the eighth day, and lasts from eight to fourteen days: it consists of pink papules the size of a pin's head, slightly elevated, which disappear on pressure; a fresh crop every two to five days. Bronchial symptoms appear, spleen enlarged, urine diminished, high-colored, slightly albuminous; may have intestinal hemorrhage and mild delirium. During the third and fourth weeks the temperature remits, each morning lower than the day before; pulse and respirations continue frequent; tongue, dry brown streak down centre, red on tip and edges; sordes on teeth; alvine discharges diminish and consistency improves; extreme emaciation and prostration; muscular tremor; feeble heart-sounds; labial herpes; sudamina on abdomen, chest, and neck; intestinal hemorrhages; bed-sores; may have retention of urine and hæmaturia. These symptoms gradually subside, and by the end of the fourth week there is gradual convalescence.

What are the principal anatomical lesions?

They are confined chiefly to changes in the intestinal glands, and especially to the solitary and agminate glands of the ileum, generally most pronounced in the neighborhood of the ileo-cæcal valve. These glandular lesions consist of (1) swelling and hyperplasia; (2) necrosis and sloughing; (3) ulceration; (4) healing. These stages coincide quite uniformly with the four weeks of the disease.

What are the complications and sequelæ?

Pharyngitis, laryngitis, œdema glottidis, pneumonia, pleurisy, capillary bronchitis, acute tuberculosis, perforation of intestines, peritonitis, phlegmasia dolens, phthisis, mental weakness, temporary paralysis, neuralgia, otorrhœa, abscess, tetanus.

From what diseases must typhoid fever be differentiated?

From typhus, remittent, typho-malaria, meningitis, bronchitis, pneumonia, acute tuberculosis, enteritis.

Give a synopsis of the treatment of typhoid fever.

Strict quarantine and thorough destruction of all stools, and the strictest hygiene; liquid nutritious diet at regular intervals; alcohol as needed. Treat the symptoms: for restlessness, by bromide, chloral, etc.; for tympanites and pain, by turpentine enema, poultices, opium; excessive diarrhœa, by bismuth, opium, vegetable astringents; obstinate cases of diarrhœa, by lead, copper, or silver; constipation, by castor oil or enema; intestinal hemorrhage, by tannic acid, turpentine, opium, ergot; perforation and peritonitis, by absolute rest, opium, antiseptics; high temperature, by baths, packs, or sponging with caution, watching the temperature range.

TYPHUS FEVER.**Give the definition of typhus fever, and the synonyms.**

Typhus fever is a highly contagious, continued fever, characterized by extreme prostration and a peculiar eruption.

The *synonyms* are—Petechnial fever; Ship, Jail, or Camp fever; Cerebral-typhus (Ger.); Typhus contagieux (Fr.).

What are the causes of typhus fever?

Predisposing: overcrowding and bad hygiene, filth, debilitated physical condition, idiosyncrasy. Exciting: infection.

How many stages are there? and what is their duration?

Four: incubation, five to fourteen days; invasion, three to eight days; eruption, nine to twelve days; defervescence, one to two weeks.

Give the chief symptoms according to stages.

Incubation: general malaise, restlessness, headache, anorexia.

Invasion: chill and pyrexia, prostration, pains in back and legs, staggering gait, trembling limbs, cephalalgia, vertigo, tinnitus; hearing impaired; photophobia with sparks before the eyes, pupils contracted; drowsiness, restlessness, delirium, muttering or violent; eyes injected, cheeks flushed, complexion dingy; nausea and vomiting; tongue coated, white at first, soon becomes brown and dry; thirst, anorexia, constipation; spleen enlarged; skin hot; bronchial

catarrh; pulse frequent, temperature reaches 104° or 105° F. in twenty-four hours.

Eruption: about fourth or fifth day, on abdomen, sometimes on back of wrists, rarely on face or neck, spreads rapidly; it is complete in three days; disappears under pressure for three or four days, not after. In appearance there is at first a general redness, then little red spots, then mottling or mulberry rash and petechiæ. There is no desquamation. Sudamina at end of second week. Headache ceases by tenth day. Other symptoms: aggravated, muttering delirium or stupor and coma, eyes more congested, pupils contracted or irregular; picking at bed-clothes; at times convulsions, deafness, diarrhœa, sometimes incontinence of urine and fæces, or may have retention of urine; extremities cold and clammy; thirst, difficult deglutition; nostrils obstructed; tympanites; tongue brown, dry, and cracked; sordes; pulse small, weak, irregular; heart feeble, dyspnœa; bronchial symptoms, hiccough; urine albuminous—may contain sugar; breath offensive; may have bed-sores.

Defervescence: crisis on the fourteenth day, indicated by a long, deep sleep, from which patient awakens conscious, with a moist skin, fading eruption, and clearer complexion; tongue moist, and begins to clear; temperature and pulse fall. Relapses are rare.

What are the complications and sequelæ?

Bronchitis, hypostatic congestion, pneumonia, pleurisy, laryngitis, gangrene of toes, cancrum oris, erysipelas, suppurative parotitis, abscesses, phthisis, phlegmasia dolens, paralysis, dysentery, renal disease.

From what diseases must it be differentiated?

Typhoid, typho-malarial, and remittent fevers, meningitis, acute tuberculosis, pneumonia, enteritis.

What is the treatment of typhus fever?

Quarantine, strict hygiene, nutritious diet, alcohol. To reduce the temperature, sponging, pack, or baths, mild aperient, cooling drinks; dilute mineral acids, with bark, quinine, digitalis, iron: avoid exertion during convalescence.

CEREBRO-SPINAL MENINGITIS.

Define cerebro-spinal meningitis, and give the synonyms.

Cerebro-spinal meningitis is a specific disease with localization upon the meninges of the brain and spinal cord.

The *synonyms* are—Epidemic cerebro-spinal meningitis; Cerebro-spinal fever; Congestive or Petechial fever; Fievre cérébro-spinale (Fr.); Genickkrampf (Ger.).

What are the causes of cerebro-spinal meningitis?

Predisposing causes are—male sex, cold seasons, and fatigue with exposure; also insanitary surroundings. The special cause is unknown. It is not contagious, though epidemic; malaria, unwholesome food, and changes of temperature have been assigned as causes.

What are the symptoms?

There may be prodromata lasting for a couple of hours to several days, but generally the attack is sudden, beginning with a sharp chill or convulsions in very young children, prostration, feverishness, vomiting, and intense pains in the head, back, and limbs. These gradually grow worse, and the disease is fully established: there will be headache; spinal pain; hyperæsthesia of skin; rigid flexion of body (opisthotonos); clonic convulsions; ptosis; strabismus; paralysis of bladder and rectum, of the muscles of deglutition, and general paralysis with aphasia; the conjunctivæ are congested, sometimes suffused; pupils generally dilated, sometimes contracted or unequal; photophobia, spasmodic movements of the eyeball, blindness, ulceration of the cornea, or cataract in rare cases; deafness; loss of smell. The affections of these three senses may be temporary or permanent. There will also be a loss of equilibrium; the countenance will be pale and sunken or distorted or set and stupid; delirium, mild, reasoning, hysterical, or maniacal; coma in fatal cases; vertigo, debility; tongue generally moist and white—may be brown and dry for a few days; nausea and vomiting; emaciation; anorexia; constipation, in rare cases diarrhœa; fauces inflamed; sometimes the parotid swells, and it may suppurate; aphthæ; urine increased or diminished, acid, in some rare cases albumin and sugar; swelling of joints, usually knee, elbow, wrist, and then of fingers and toes; breathing sighing, labored, and interrupted; œdema of lungs, due to opisthotonos interfering with expansion; pneumonia; pulse diminished in force and volume, and variable in rate and rhythm; heart palpitations in some fatal cases; temperature 100° to 103° F., sometimes 105° F.; evening exacerbations, irregular fluctuations; eruptions not always present—generally petechiæ and ecchymoses, also herpes labialis, roseola, and urticaria. The causes of death are convulsions and coma, asphyxia,

exhaustion, or intercurrent diseases. Convalescence is tardy; in some cases perfect restoration is never attained.

What are the complications and sequelæ?

Inflammations of the eyeball and middle ear, purulent inflammations of joints, bronchitis, pleurisy, pneumonia, pericarditis, endocarditis, bed-sores; chronic hydrocephalus, blindness, deafness, deaf-mutism.

From what should this be differentiated?

From tubercular meningitis, tetanus, typhoid and the other eruptive fevers.

Give the treatment of cerebro-spinal meningitis.

Prophylaxis: remove bad hygienic surroundings and isolate the sick; rest in a dark, cool, well-ventilated room, free from noise and confusion; milk diet; ice-water or seltzer-water for thirst; calomel for constipation; if the urine is retained, use the catheter. Bromide of potassium and opium or cannabis Indica give best results; if these do not control the convulsions, chloroform. Stimulants for debility. Locally, heat or cold, blisters to nape of neck, or leeches to temples or mastoid processes. Keep body and extremities warm by mustard baths, friction, hot bottles, etc. During convalescence, tonics, vegetable bitters, arsenic, and iron.

ASIATIC CHOLERA.

Give the definition and synonyms of cholera.

Cholera is an epidemic disease characterized by copious watery discharges from the alimentary canal, followed by a tendency to collapse.

The *synonyms* are Cholera algida, asiatica, maligna, and spasmodica.

Give the etiology of cholera.

Predisposing Causes.—High temperature and excessive moisture, bad sanitary surroundings, impure food and water, impaired health.

Exciting Causes.—A specific poison conveyed in water, milk, and food, also by fomites.

What are the symptoms?

There are two stages—the attack and the reaction; and three classes of symptoms—those of the intestines, the circulation and respiration, and the kidneys. Diarrhœa may precede the attack,

and symptoms of malaise; and often there is no diarrhœa. A child previously healthy is suddenly seized with profuse purging and vomiting, and in a few hours cholera develops, with bright-yellow discharges, cramps, disappearance of pulse, rigors, cyanosis, and suppression of urine. The rice-water discharges are very rare with children. The stools are not copious: five or six thin evacuations in an infant may induce dangerous collapse; in marasmic children one stool may be followed by convulsions and death. If the stools become pinkish, it indicates hemorrhage and the prognosis is hopeless. Children under one year rarely recover. The majority of children with cholera rarely vomit—at the most only once or twice; the act of vomiting is accomplished by very slight exertion; at first the food, after that the transudations of the gastric mucous membrane mixed with the fluids drunk. The absorbing function of the gastric and intestinal mucous membrane is much diminished, but it may be suddenly restored when transudation is undergoing spontaneous diminution. Abdomen retracted, stomach filled with gas, intestine with fluid. Very little colic, but incessant nausea. The discharges do not redden the anus. The volume of the blood is diminished in, and the fluids disappear from, the parenchymatous organs and serous sacs. The pulse and second sound of the heart disappear, sometimes with the first liquid stool. During the first few hours there is increased action of the heart and pulse. Pulseless children are generally lost. The veins are filled with semi-fluid blood, and there is capillary stasis, causing cyanosis: healthy children become cyanotic, emaciated children yellowish-gray. The lungs show nothing abnormal, but the breathing is irregular and sighing, and there is intense dyspnœa; the expired air is cool; with the cool breath there will be coolness of the extremities, nose, and forehead, giving an unfavorable prognosis. The urine is either retained or passed in very small quantities; it contains albumin and casts; the convulsions are probably due to the arrest of the secretion of the urine. If children recover from the attack, typhoid symptoms may develop: hot, dry skin, hard and frequent pulse, dry tongue, and symptoms of cerebral congestion. Death is generally due to convulsions or marasmus.

What are the complications and sequelæ of cholera?

Obstinate vomiting, gastritis, nephritis, enteritis, bronchitis, pneumonia, pleurisy, inflammation of genitals, corneal ulcer, gangrene, carbuncles, diphtheritic exudation of fauces.

With what diseases may it be confounded?

Diarrhœa, dysentery, cholera infantum, poisons, and cold stage of malarial fevers.

What are the indications in treatment?

Prophylaxis by strict quarantine and hygiene; keep the child clean and warm; satisfy its thirst by small quantities of water. Children at the breast should be kept nursing. Drugs indicated, opium, quinine, tannic acid, strychnine, chloral, caffeine, benzoate of sodium, camphor, stimulants, saline transfusions.

WHOOING COUGH.**Give the definition and synonyms of whooping cough.**

Whooping cough is an acute, infectious disease, characterized by a peculiar paroxysmal cough, having a loud crowing or whooping sound.

The *synonyms* are—Tussis convulsiva; Pertussis; Chin-cough; Kink-cough; Kauchhusten (Ger.); Coqueluche (Fr.); Pertossi (It.).

What are the causes of whooping cough?

Predisposing.—Childhood, debility from disease, dampness. *Exciting*.—A peculiar poisonous principle, possibly microbic, conveyed in the breath of the affected.

What are the symptoms?

Incubation varies from two days to two weeks; no symptoms. During the catarrhal stage, which lasts from ten to fifteen days, there will be slight fever, coryza, and anorexia, with a frequent dry cough. The spasmodic stage is characterized by the peculiar cough which gives the name to the disease. This cough consists of a number of loud, quick, spasmodic, forcible expiratory puffs, alternating with prolonged, shrill, inspiratory whoops; it begins suddenly during the attack; the eyes protrude, the body is bent, the face gets red, cyanosis may appear, the cough may get weaker so as to be hardly heard, and ends with the expulsion of tenacious mucus; in severe cases vomiting occurs. There may be hemorrhages, involuntary defecation and urination, hernia, prolapsus ani, or convulsions. Between the paroxysms there will be exhaustion, with anorexia, cephalalgia, insomnia, pyrexia, etc. Examination of the lungs shows normal resonance on percussion and dry or

moist râles on auscultation. Ulceration of the frænum linguæ. During the stage of decline there is a gradual amelioration of all the symptoms.

Give some of the complications and sequelæ.

Bronchitis and pneumonia, emphysema, rupture of air-vesicles, collapse of lung, convulsions, hernia, cerebral apoplexy, hemorrhages, pleurisy, phthisis, acute tuberculosis, meningitis, the exanthemata.

From what diseases must it be differentiated?

Bronchitis, naso-pharyngeal catarrh.

Give the treatment of whooping cough.

During the first stage keep patient warmly clothed in a warm room; give an aperient and diaphoretics. During the second stage use sedatives and antispasmodics, belladonna, opium, hyoseyamus, lobelia, aconite, ether, chloroform, camphor, etc.; emetics: alum, zinc, ipecac, copper, etc.; other drugs recommended are mineral acids, tannic acid, arsenic, strychnine, ergot, bromides and iodides, quinine. Locally, carbolic acid, quinine, cocaine, counter-irritants, sulphur fumes. The diet must be highly nutritious, and the patient kept out of doors if the weather permits. Treat other symptoms and complications. During convalescence tonics, change of air, good diet.

MUMPS.

Define mumps, and give some of the synonyms.

Mumps is an acute, specific infectious disease, characterized by inflammation and swelling of the parotid gland and metastasis to other organs, as the ovaries and testicles.

The *synonyms* are—Parotitis; Parotiditis; Clown's disease; Oreillon (Fr.); Ziegenpater (Ger.).

What are the causes of mumps?

Predisposing Causes.—Early life, bad hygiene, season of the year. *Exciting Causes.*—A peculiar virus of unknown origin, which is highly contagious, propagated by contact or fomites.

Give the symptoms of mumps.

Incubation, five days, varies up to twenty days; slight malaise with anorexia and cephalalgia. As the disease develops there are tenderness and swelling in the neighborhood of one or both parotid

glands; the swelling extends up in front of the ear, behind the ear, and down on to the neck; the skin may be inflamed and desquamation may occur; motion intensifies the pain; speech and hearing impaired; may have salivation; may have convulsions. Swelling lasts from four to eight days; profuse perspiration during convalescence. Abscesses may occur; neighboring glands may enlarge. The testicle in the male, the ovary, mammæ, or uterus in the female, may be affected during or after the parotitis.

What are the complications and sequelæ of mumps?

Stomatitis, pharyngitis, high temperature, delirium, atrophy of testicle or ovary, epididymitis with occlusion of spermatic duct, pneumonia, meningitis.

Give the differential diagnosis.

From adenitis cervicis, periodontitis.

Give the treatment of mumps.

Rest, liquid diet, an aperient; make patient comfortable; aconite for high temperature. Treat orchitis, ovaritis, etc. on general principles.

ERYSIPELAS.

Describe erysipelas in children.

Erysipelas in very young or new-born children is characterized by its tendency to spread rapidly over the entire surface of the body; as fading commences adjoining parts are involved. In other respects and in older children the disease presents the same manifestations as in adults: fever very high; rapid, tense pulse; anorexia, constipation, vomiting; urine decreased and high-colored, sometimes retention or suppression; nervous phenomena, restlessness, irritability; in extreme cases delirium and coma. The affected portion of skin is scarlet, dark-red, or bluish, tense and shining, infiltrated, hot; pressure causes pain.

Causes.—In very young infants infection of the navel, in older children wounds, irritations, contagion. It frequently follows vaccination, even where every precaution has been exercised.

Prognosis.—Young infants succumb early; in older children the severity of the attack, the tendency to migrate, and the general physical condition modify the prognosis, but it is a grave disease.

Treatment.—Nourishing diet and stimulation; open the bowels with calomel or salines; for the nervous phenomena, morphine; for

the fever, aconite; for suppression, diuretics, dry cups to the loins, followed by poultices. Tr. ferri chlorid. ranks high in the general treatment of the disease itself; quinine is also advocated. Locally, lead and opium, hamamelis, white paint, ichthyol, aristol, resorcin, Volkman's rail fence, or some of its modifications.

INTERMITTENT FEVER.

Define intermittent fever, and give the causes and pathology.

Intermittent fever—known also as Malarial fever, Malaria, Ague, Fever-and-ague, etc.—is a non-contagious fever, characterized by regularly recurring paroxysms.

Cause.—Malarial poisoning, the bacillus malarix.

Pathology.—Enlargement of the spleen and liver, effusions into serous cavities, destruction of the red blood-corpuses, and deposits of brown or black coloring matter in the spleen, liver, brain, kidneys, and mucous membranes.

Give the symptoms.

Quotidian, tertian, and quartan occur, the first most frequently. The paroxysm of chill, fever, and sweating may be as marked as in the adult, but usually it is modified; instead of the chill the skin is pale, lips and nails blue, extremities cold; vomiting may occur or twitching of the facial muscles or convulsions; this stage may be so short as to pass notice. The hot stage is more marked: the skin is hot, the face flushed; there is headache; epigastric pain, anorexia, thirst, nausea, vomiting; fever 105° or 106° F.; strong, diffused cardiac impulse; pulse rapid and tense; restlessness and prostration. The sweating stage is not marked by profuse perspiration unless the child sleeps; instead there is mere moisture of the skin; gradual amelioration of all the symptoms. Between the paroxysms the child is restless, irritable, and has a poor appetite. The patients soon become emaciated and anæmic, with white or gray-colored skin, pale mucous surfaces, white-coated tongue, puffy eyelids, poor appetites, loose stools, lassitude, peevishness; they complain of stomach-ache, headache, of being tired; the spleen and liver are enlarged, the abdomen is tympanitic. Hæmaturia may be present. In some rare cases neuralgias may occur.

Give the treatment of intermittent fever.

During the paroxysm make the patient comfortable. Remove the child from the malarial district if possible. Of drugs, quinine

or some of the other preparations of cinchona ranks first: older children will take the quinine in pills or wafers; younger children and infants will have to take it in solution. Various vehicles have been suggested to hide its bitter taste: the different preparations of liquorice are quite efficacious for this purpose, or the powder may be hidden in the centre of some chocolate paste or the chocolate-quinine troches may be used. Arsenic is of service where there is an idiosyncrasy against quinine and in some chronic cases.

DIABETES INSIPIDUS.

Give the definition and synonyms of diabetes insipidus.

Diabetes insipidus is a disease characterized by the passage of enormous quantities of pale urine of low specific gravity and free from albumin casts or sugar.

The *synonyms* are Polyuria, Polydipsia, Diuresis.

What are the causes?

Heredity is supposed to be a predisposing *cause*. Exciting causes: tuberculosis, organic disease of brain or cord, injury to nerve-centres, dilatation of renal vessels from paralysis of muscular coat, exposure.

What are the symptoms?

The frequent passage of enormous quantities of pale watery urine, sp. gr. 1001 to 1007, and containing no abnormal constituents; great thirst and voracious appetite; health generally good. The disease persists for years. Death may occur from a complication. Emaciation and dyspeptic symptoms may precede death.

Give the differential diagnosis.

From glycosuria and cirrhotic kidney.

Give the treatment of diabetes insipidus.

Look after the general health; no restrictions in diet or fluids. Drugs recommended: opium, ergot, iron, belladonna, dilute nitric acid, tannic acid, gallic acid, potassium nitrate, iodide, or bromide.

DIABETES MELLITUS.

Give the definition and synonyms of diabetes mellitus.

Diabetes mellitus is a chronic disease, characterized by an in-

creased quantity of urine of high specific gravity and containing grape-sugar.

The *synonyms* are Glycosuria, Melituria.

What are the causes of diabetes mellitus?

Obscure. Heredity is supposed to be a predisposing cause. Exciting causes: injury to head or spine, acute febrile disease, exposure to wet and cold, and drinking cold water when heated, excessive use of sugar and starch, pancreatic lesions.

Give the symptoms of diabetes mellitus.

The frequent passage of large quantities of pale irritating urine, having a sweet taste, sp. gr. 1030–1060, and containing sugar in varying percentages; inflammation or excoriation of the genitals; excessive thirst; varying appetite, with dyspeptic symptoms; tongue red, dry, and shiny; gums spongy; teeth decay early; breath has a sweet odor; constipation, with diarrhœa toward the end; the child emaciates; the skin is dry and scurfy; great prostration; œdema of legs, sometimes extends to other parts; pains in the legs and over the region of the kidneys.

Give the differential diagnosis.

The persistent presence of the sugar prevents its being mistaken for any other disease.

What are the complications?

Boils and carbuncles, chronic skin affections, gangrene, phthisis, endocarditis, Bright's disease.

What is the prognosis?

Bad. The disease may be kept in abeyance, but it is progressive, and a cure can hardly be expected.

Give the treatment of diabetes mellitus.

Regulation of the diet; the absolute removal of starch and sugar; proper hygiene. Numerous drugs have been recommended—codein, calcium sulphide, ac. salicylic., ergot. *Treat the symptoms. Iron and cod-liver oil are often of value.

RICKETS.

Give the definition and synonyms of rickets.

Rickets is a constitutional disease, due to perverted nutrition,

affecting nearly every tissue of the body and resulting in deformities of the bones.

The *synonyms* are—Rachitis ; Rachitisme (Fr.) ; Englische krankheit (Ger.).

What is the etiology of rickets ?

Poor food, bad air, absence of sunlight, debilitating diseases, hereditary or racial influences.

Give the pathology of rickets.

Ossified bones soften ; ossification in cartilaginous parts is retarded. In the long bones the new bone deposited beneath the periosteum is soft and deficient in earthy salts ; the animal matter does not yield gelatin on boiling ; the ossification at the epiphyses is slow and irregular ; the border of ossification is serrated ; the medullary cavity increases, extending beyond the border of ossification, and is filled with a reddish pulpy matter. As a result of these changes the bone is shorter than normal, has enlarged epiphyses, and is easily bent. In the flat bones the circumference is thickened and the centre thinned (craniotabes). The late closing of the fontanelles and the weak union of the sutures, with ridges at their edges, are due to the deposit of the earthy matters at the circumference of the bones. The liver, spleen, and lymphatic glands are enlarged and harder than normal. The brain is hypertrophied, chiefly in the white substance. The muscles are flabby and pale ; the ligaments are relaxed.

At what age does rickets occur ?

Rarely before the seventh month or after the seventh year ; it may occur during intra-uterine life or as late as puberty.

Give the symptoms of rickets.

Imperfect nutrition ; appetite good, but patient doesn't thrive. Peevish, wants to be let alone, due to hyperæsthesia of skin. Growth is retarded, loses plumpness, looks puny. Diarrhœa and constipation alternate. Throws off the bed-clothes ; profuse sweating, especially about head and upper part of chest ; hair on back of head thin and short ; stools very offensive ; muscles soft and flabby, ligaments relaxed and joints abnormally movable ; late irregular dentition—teeth poorly formed and decay early ; little if any temperature ; marked thirst. During the second stage the bones become softened and deformed, chiefly the lower extremities,

due to the weight of the body. The symptoms of the first stage continue, but not so severe. The head becomes rectangular ("box-shaped"), elongated, flattened on top and at the sides; occiput projects; frontal bones prominent, fontanelles open, sutures loosely united; soft spots in occipital bones. Kyphosis, due to weakened spinal muscles and ligaments, and softened vertebral bodies and intervertebral cartilages; scoliosis. Scapula smaller than normal; clavicle thickened, ends enlarged, curves exaggerated. Deformities of arms, due to supporting body-weight. Enlargement of epiphyses at wrists. Ribs depressed at cartilaginous junction from atmospheric pressure and muscular action, pushing sternum forward ("pigeon-breast"); lower ribs pushed out by enlarged liver and spleen. "Beading" at cartilaginous ends of ribs from epiphyseal enlargement. Abdomen enlarged ("pot-belly") from accumulation of gas in intestine, downward pressure of thoracic organs, and relaxed condition of intestinal and abdominal walls. Sacrum and acetabula are pushed into the pelvis by weight of trunk. Neck of femur forms nearly a right angle with the shaft. Genu valgum or varum. Malleoli enlarged and prominent. Talipes valgus, due to stretching of plantar fascia and breaking down of arch of foot, with softening of bones of tarsus.

During the last stage there is an improvement in all the symptoms, but the bone-deformities remain permanent and can only be cured by operation.

What are the complications and sequelæ?

Bronchitis, pneumonia, enteritis, laryngismus stridulus, convulsions, diarrhœa, chronic hydrocephalus. The chief sequelæ are the deformities.

Give the differential diagnosis of rickets.

From tuberculosis, scrofulosis, and syphilis.

What is the prognosis?

Good as to life; few die save from the complications. As to the deformities, the *prognosis* depends upon the length and severity of the disease.

Give the treatment of rickets.

Improve the nutrition and hygiene; castor oil or rhubarb and soda for intestinal derangements; chloral or bromides for nervous

derangements; cod-liver oil, phosphorus, lime, iron, quinine, orthopedic surgery.

HEREDITARY SYPHILIS.

Define hereditary syphilis, and give the etiology.

Hereditary syphilis is a chronic constitutional disease acquired during foetal life from one or both parents. The cause is a specific virus of bacteriological origin, usually transmitted by the father. If the mother is infected, the pregnancy generally terminates early in abortion or miscarriage. The father may infect his offspring and the mother remain healthy, and nurse her child without becoming infected; but a syphilitic child will infect a healthy wet-nurse. A syphilitic father may beget healthy children.

Describe the principal symptoms.

This disease presents two forms: in one it develops in utero, in the other soon after birth. In the former the children are either born dead, die soon after birth, or live to suffer from the severe lesions of the disease; in the latter the disease is more susceptible of treatment.

Syphilitic children born dead present all the lesions of the skin and mucous membranes, from the simple macules to the pustular eruptions; the skin is macerated and peels off, and frequently deformities, due to retarded development, are present. Those born alive are weakly and puny, have snuffles; the muscles are soft and flabby; the skin is wrinkled, and either covered with the syphilitic rash or it develops within a few days; mucous patches and condylomata are found around the anus and in the mouth; the angles of the mouth are fissured; the skin peels from the palms of the hands and soles of the feet; there are ophthalmia and offensive coryza. These children soon perish, or, where the symptoms are of a milder type, they may live and the severe symptoms develop later. Some children are born apparently healthy, and only after a few weeks or months do the symptoms develop.

Syphilitic children in general are anæmic, emaciated, irritable, restless; the skin is dry, wrinkled, and scurfy, and of a dusky, smoky tinge. The disease affects all the organs and tissues—skin, subcutaneous tissues, glandular structures, mucous membranes, muscles, and bones. On the skin the syphilides are macular, papular, or pustular; in the subcutaneous tissue abscesses form, and are *followed, after rupture, by puckered, pigmented cicatrices; wasting*

of this tissue occurs, causing wrinkling and shrivelling of the skin; in the glandular structures enlargements occur, especially in the spleen; the lymphatic glands are enlarged, particularly the epitrochlear and inguinal; gummy tumors develop in the spleen, kidneys, suprarenal capsules, liver, and lungs; abscess of the thymus glands may occur; on the mucous surfaces the lesions are similar to those affecting the skin, and the attendant inflammations produce coryza, bronchitis, gastritis, enteritis, etc., with their peculiar symptoms; mucous patches develop in the mouth, on the tongue, hard and soft palate, gums, lips, and cheeks; cracks and fissures at the angles of the mouth, around the margins of the anus, upon the prepuce and vulva; ophthalmia and keratitis; otorrhœa followed by deafness; coryza with caries of the nasal bones and flattening of the bridge of the nose; balanitis and leucorrhœa may be present. The muscular changes pertain more to malnutrition; the bone-changes resemble those of rickets—epiphyseal enlargements, the shaft shortened and softened, with consequent bending and deformity, the periosteum thickened, and tender points developed. The hair is dry and brittle, the nails striated and brittle; Hutchinson's teeth appear with the second dentition.

The affection of the nervous system, due to fibrous and gummatous thickenings and infiltrations, is manifested by paralysis more or less localized, epilepsy, hydrocephalus, idiocy, and mental retardation.

What is the prognosis?

In breast-fed children, in whom the disease appears late, the *prognosis* is good. In bottle-fed children, and in those in whom the symptoms develop at or soon after birth, the prognosis is bad. Children born with the pustular syphiloderm usually last but a few hours.

What is the treatment of hereditary syphilis?

Mercury, either by inunctions, calomel, or with chalk. The inunctions may be practised daily, using from ten to twenty grains of mercurial ointment, which may be rubbed in with the hand or smeared on the flannel roller. Calomel or gray powder may be given in doses of $\frac{1}{20}$ to 1 gr. three or four times daily. The mixed treatment of biniodide of mercury and iodide of potassium is also recommended, and also iodide of potassium alone—drop doses of saturated solution. The care of the child as to nutrition, clothing, baths, hygiene, etc. must be closely watched.

TUBERCULOSIS.

Define tuberculosis, and give the etiology and pathology.

Tuberculosis is a specific infectious disease accompanied by tubercles, which owe their origin to the bacillus tuberculosis.

The *causes* are heredity and faulty hygiene and food. Among the exciting causes are measles, pneumonia, enteritis, and all debilitating diseases.

Pathology.—The tubercle bacilli are rod-shaped micro-organisms about one-third the diameter of a red blood-corpuscle in length, and about five times longer than broad; they are slightly curved, have rounded ends, and are provided with spores; they are found in varying numbers in all tuberculous lesions and in the fluids coming from the parts affected. The tissue-changes effected by the bacilli consist of cell-increase and the formation of giant and epithelioid cells, or inflammatory small-cell infiltration or exudation of serum, fibrin, and red and white blood-corpuscles. The bacilli attack the epithelium cells of the channels which they enter or the white blood-corpuscles or the wandering cells, convert them into epithelioid cells, and start the nucleus of a tubercle. Miliary tubercles consist of giant cells in the centre, containing nuclei, surrounded by lymphoid cells, and outside of these and penetrating between them epithelioid cells: in size they range from those so small as to be invisible to the naked eye to those as large as a pea: the smallest are pearly and transparent, the larger white and opaque; they are closely connected to the tissue in which they develop, and are distinct or not according to the density of the tissue; they contain no blood-vessels; caseation, due to the action of the tubercle bacillus, begins in the centre and consists of necrosis and destruction of the cell-elements and the formation of a firm, dry, white or grayish-white mass. As a result of the irritation caused by the tubercle and the action of the bacilli the tissue surrounding the tubercle undergoes infiltration and inflammatory exudation, the exudation being fibrinous, hemorrhagic, or purulent; new foci of caseation appear, and, the intervening tissue becoming involved, the tubercular cavity already formed thus steadily increases in size. Tuberculosis is almost always attended with caseation, while the number of the bacilli and the structure of the tissue affected determine whether the tubercle tissue shall occur as miliary tubercles or as a diffuse infiltration: these results in varying degrees of intensity *are found* in all the organs and tissues involved.

Describe the symptoms of tuberculosis.

Tuberculous children have transparent, white skins, with blue veins, large, lustrous eyes, and bright-red lips, and are precocious and neurotic; or they have large heads, coarse features, thick, flabby skin, and are dull and apathetic. The other symptoms pertain more particularly to the part affected.

The general *symptoms* are pale, sallow, and sad countenance; circumscribed redness of one or both cheeks; blue sclerotic; the skin is hot and dry, and toward the end flabby and wrinkled, and attended with a bran-like desquamation; anæmia and emaciation; digestive disturbances; fever with accelerated pulse and thirst; hectic fever; sweating around the head, dyspnoea if the lungs are much involved or the pulmonary circulation impeded; appetite not always affected; infants under one year will nurse well and remain plump to the end; œdema occurs late about the ankles, and sometimes on the face and upper extremities; diarrhoea and stomatitis occur late; cough and expectoration. In addition to these general symptoms there will be the local symptoms, which relate to the organ, tissue, or joint affected.

Describe tuberculosis of the lungs.

The changes wrought by the tubercle bacillus consist in the formation of tubercles surrounded by tubercular infiltration; cheesy degeneration of the tubercle; softening and degeneration of the infiltrated tissue; and, as a result, the formation of cavities whose contents consist of disintegrated, cheesy detritus and tubercle bacilli. These cavities are of varying size and shape, are crossed by bands of parenchymatous tissue or obliterated blood-vessels (the larger ones communicate with bronchi), and they heal by cicatrization or continue growing until death occurs; healing by calcification never occurs in children. The other changes in the lungs due to these conditions are gray and red hepatization, œdema, emphysema, etc. Percussion reveals dullness only when there is extensive tuberculous infiltration; with miliary tubercles and tuberculosis of the bronchial glands percussion is negative; with children the apices are rarely affected, so that the dullness will be lower down or lateral; over cavities the flat percussion note becomes sonorous and tympanitic. Auscultation reveals large and small sibilant râles, due to bronchial catarrh, crepitant râles at the edges of consolidation, and bronchial breathing at the site of the consolidation; cav-

ernous breathing and gurgling at the site of cavities; in children cavities are small and the signs imperfect.

The respirations are increased very slightly in the chronic form, markedly so in the very acute, and attended with dyspnœa and orthopnœa.

Cough begins early and lasts through the entire course of the disease: it is dry, short, and hacking at first; later it is moist and spasmodic, resembling whooping cough. Expectoration does not occur in young children, as they swallow the sputum; in older children its characteristics are the same as in the adult. Hæmoptysis is extremely rare in children.

Other symptoms are—pain, referred to the præcordium and sternum; extreme emaciation; prominence of superficial veins, especially in the neighborhood of the sternum; bulbous swelling of the finger-tips, due to impeded circulation from stasis in the right side of the heart; œdema of the face if the bronchial glands are enlarged, and dilatation of the vessels of the neck and cyanosis.

The other symptoms, as fever, hectic, etc., belong to tuberculosis in general.

The disease appears in an acute and a chronic form: in the one case it is very rapid and appears in other organs besides the lungs; in the other it may be protracted through several years, with remissions and exacerbations, terminating in recovery or in death from general miliary tuberculosis.

Give the treatment of tuberculosis.

Hygiene, comprising baths, cold sponging, woollen clothing, healthy sleeping- and living-rooms, outdoor exercise, a warm, dry, equable climate; a highly nutritious diet; the avoidance of all debilitating occupations; correction of any exhausting intercurrent disease; keep the system in the best physical condition. Cod-liver oil, pure if possible; commence with small doses and gradually increase; linseed oil and cream; preparations of iron, hypophosphites of lime, sodium and iron, iodine, etc. Treat the symptoms—fever, cough, insomnia, etc.

Describe tuberculosis of the skin.

This assumes the form of eczema, ecthyma, impetigo, and lupus.

The eczema appears as simplex, rubrum, and impetiginous; it most usually attacks the face and scalp; on the latter thick crusts

form, matting the hairs together; there is usually a corroding exudation; there is intense pruritus; it is apt to become chronic, and is attended with relapses.

The *local treatment* consists in removing the crusts on the scalp, first softening them with oil, removal of the hair if its presence impedes recovery, and the application of soothing or stimulating ointments—zinc oxide alone or with oil of tar, bismuth, salicylic acid, tannic acid, etc.; restrict or stop the application of water to the parts; stop the scratching by cutting the nails or covering the hands with mittens. The *general treatment* is by cod-liver oil, iron, tonics, etc.

Impetigo consists of pustules on an inflamed base, drying into thick, brownish scabs.

Ecthyma consists of solitary pustules merging into indolent ulcers.

The *treatment* for these is stimulating, especially in ecthyma, and general as in eczema.

Lupus appears as hypertrophied spots of integument, as hard, bluish-red tumors, or as deep, uneven ulcers, which may become serpiginous; it appears most frequently upon the face, and is usually chronic.

Its *treatment* must be by escharotics, arsenic, chloride of zinc, phosphorus, etc., or the curette, cod-liver oil, and a generous diet.

Describe tuberculosis of the nose, eye, and ear.

In the nose there will occur a suppurating eczema or impetigo, causing tumidity of the nose and upper lip; also ozæna, with a purulent, offensive discharge and the escape of necrosed pieces of bone.

The *treatment* is cleanliness, astringents, and red-precipitate ointment.

In the eye styes form on the lids; phlyctenulæ develop on the conjunctivæ; keratitis occurs of varying degrees of intensity, and blepharospasm on account of the inflammation.

Treatment: Removal of the eyelash will sometimes abort a sty; if it suppurates it must be opened; dusting of calomel in the eye is recommended for phlyctenulæ; for keratitis and ophthalmia, ointments externally and collyria, with protection of the eye by a shade and avoidance of light, are the indications.

In the ear occur otitis externa and interna, with chronic otorrhœas and diseases of the bones.

In the *treatment* strict cleanliness is the first consideration. Peroxide of hydrogen is recommended for removing the pus, and the application of astringent and soothing powders or lotions.

Describe tuberculosis of the lymphatic glands.

The manifestations consist of swellings. The glands most usually affected are the cervical, next the axillary and inguinal. These swellings may be simple hypertrophy: if so, there is but slight alteration. If tubercular, the glands contain gray miliary tubercles or large yellow tubercles; these produce softening, ending in supuration, with the formation of abscesses and fistulous tracts.

The *symptoms* are referable to the part where the enlarged glands are located, and comprise pain and tenderness, swelling, fluctuating when pus appears, and the escape of a thin, flocculent pus, followed by a slowly-healing ulcer having callous, undermined edges.

The *treatment* must be both general and local. The child must be built up with a generous diet, tonics, cod-liver oil, etc.; locally, tincture of iodine, iodine salve, belladonna ointment, etc. may be applied to retard and diminish the glandular enlargement: if these fail, suppuration must be hastened, the pus evacuated, and the ulcer treated surgically.

Describe tuberculosis of the periosteum.

The periosteum becomes red, swollen, and spongy, and is covered with a mucous, shreddy exudate which is converted into a grayish-red or white mass, and is adherent to the bone and soft parts. This may terminate in resolution with permanent thickening of the periosteum, or suppuration with or without caries of the bone.

The *symptoms* are pain, swelling, œdema, and fluctuation, fever, impaired nutrition, and emaciation.

The *prognosis* is unfavorable.

In the *treatment* the indications are to support the patient, relieve pain, check the process if possible, otherwise hasten suppuration, and evacuate the pus early.

Describe tuberculosis of the medulla of bones.

Tubercular osteomyelitis consists, in addition to the formation of tubercle tissue, in hyperæmia of the medulla, with dark-red discoloration and extravasations, sometimes followed by suppuration; *the bone becomes carious and periostitis occurs.* The bones of the

hands and feet are chiefly affected ; they are swollen and misshapen.

The *treatment* comprises that of the cause, and compression bandages, or it may be operative.

Describe tuberculosis of the bone-structure.

Tubercular osteitis may occur in the compact, but chiefly in the cancellous, structure. Inflammation, with hyperæmia and infiltration, starts at some point, but quickly spreads ; softening follows, with the formation of a thick, yellow fluid containing cheesy masses and fragments of bone ; cavities result and the bone crumbles away. This inflammatory process may terminate in resolution, which is extremely rare ; suppuration, which ceases before caries has commenced ; caries or necrosis.

The *symptoms* are continuous pain, swelling of the part affected, with inflammation and tenderness of the skin covering it, fluctuating as pus forms. The general symptoms are fever, anorexia, emaciation, diarrhœa, disturbed sleep, debility, and weakness.

The *treatment* consists in improving the condition of the patient, allaying pain, hastening resolution by means of derivatives, as setons, vesicants, iodine salve, etc., support and rest of the affected part ; if abscesses form and break, assist the discharge of the contents and the healing of the cavities and sinuses by injections or surgical operations.

Pott's Disease.

Describe Pott's disease of the spine.

This is an inflammation of the bodies of one or more vertebræ, ending in ulceration and destruction of the bones. It is tuberculous in character, and is excited usually by traumatic influences. The process begins in the centre of the body, but quickly spreads, involving the intervertebral cartilages and producing curvature : this may be backward (kyphosis), lateral (scoliosis), or backward and lateral combined (kyphosis-scoliotica). The inflammation extends to the adjacent soft parts, producing abscesses, which often burrow and point at some distance from the spinal lesion. The disease may originate at any point, but its most frequent location is the dorsal region, next the cervical, and least frequently the lumbar and sacral.

The *symptoms* in general comprise spinal pain, epigastric pain (bellyache), tender spots on the spine, rigidity of the spine ; the

child squats, does not bend to pick things up; a tap on the head causes pain; later the lateral curvature or the projecting spinal process will be discovered. Attendant upon these are irritability, anorexia, sleeplessness, digestive disturbances, fever, emaciation, and anæmia. In addition to these, symptoms appear, depending upon the portion of the part affected: when the disease is in the cervical region the neck is kept stiff, the head rigid and supported by the hand; the neck swells; the upper extremities suffer spasmodic movements or paralysis; the thoracic and digestive organs are deranged; retropharyngeal abscesses may occur, or destruction of the atlas and axis, in which case death occurs from compression of or tearing the medulla oblongata. When the disease is in the dorsal region the spine is kept rigid and supported by the hands on the thighs; the head is drawn backward and buried between the shoulders; pains and formications are felt in the lower extremities, followed by spasmodic affections, and later paralysis, constipation, and digestive disturbances; psoas abscesses; Bright's disease may appear, and paralyses of the sphincters. When the disease is located in the lumbar or sacral regions there will be contraction of the thighs and pelvic abscesses.

The *treatment* must have for its object the building up of the system, the relief of the symptoms, etc., pain, anæmia, obstipatio, etc., the healing of the abscesses, and the support of the spine and correction of deformity by suitably-applied orthopædic apparatus.

Tuberculosis of the Joints.

Describe tuberculosis of the joints.

The ends of the bones which enter into the joints may be attacked by tubercular inflammation, which may terminate in supuration and always in caries. This inflammation extends to the joint; perforation occurs; the cartilages are destroyed and the joint invaded, causing destruction of the synovial membrane and dislocation of the ends of the bones; or the inflammation may begin in the synovial membrane; granulations appear and the membrane becomes thickened, infiltrated, and suppurates; the inflammation extends to the ligaments and soft parts; the pus, when present, burrows, forming sinuses; the joint swells; the skin is stretched and shining; the muscles become flabby and undergo fatty degeneration; finally, the cartilages and bones themselves are *involved, ending in caries and necrosis*. Sometimes the disease be-

gins in the bones and synovial membrane at the same time. The disease may terminate as an acute affection or become chronic.

The *symptoms* are fever, with chilly sensations, restlessness, anorexia, anæmia; pain, at first intermittent, later constant, aggravated by pressure and motion; swelling of the joint; the skin may be unchanged or hot, red, stretched, and showing tortuous vessels; fluctuation as pus forms. The disease may terminate in recovery without derangement of the function of the joint, recovery with diminution of the joint function, or recovery with dislocation of the bones forming the joint.

The *treatment* consists in improving the physical condition and relieving the symptoms, particularly the pain; locally, measures to promote absorption of the exudation, as iodine, silver nitrate, setons, the cautery, etc.; the early evacuation of abscesses if the patient's condition permits of it; soothing and healing applications to the resulting sinuses; surgical operations if the joints are badly affected; absolute rest throughout, and the placing of the joint in such a position that the resulting ankylosis may produce the slightest possible inconvenience.

Morbus Coxæ.

Describe morbus coxæ.

Inflammation of the hip-joint may begin in the head of the femur, the synovial membrane, or soft parts. It may be acute or chronic. In the acute, pain appears suddenly in the hip-joint, extending down the inside of the thigh to the inner side of the knee; it is increased by pressure and motion, and is worse at night; the thigh is flexed upon the abdomen and rotated inward, the leg shortened; there are fever, restlessness, and systemic disturbance; the hip is swollen, and if resolution does not occur suppuration and abscesses follow; destruction of the head of the femur; luxation of the joint; hectic and pyæmic symptoms supervene, quickly followed by death, or the suppuration may cease and the patient recover with a damaged joint. In the chronic form the pains are intermittent, the joint is weak, the foot is dragged, there will be vespertine fever; after a longer or shorter period these symptoms become more marked and the acute form develops, but is not so rapid as where the disease commences as acute: it may terminate in death, but more frequently recovery takes place with shortening of the limb, the formation of a false joint, and more or less impairment of the usefulness of the joint.

The *treatment* comprises absolute rest of the part by means of a splint or plaster bandage, resection, surgical interference, and subsequent application of apparatus to correct the deformity. A general treatment must also be followed: cod-liver oil, iron, tonics, diet, hygiene, etc.

White Swelling.

Describe white swelling of the knee.

This begins most frequently in the synovial membrane, next in the condyles of the femur, least frequently in the head of the tibia.

The *symptoms* presented are stiffness, swelling, and increased temperature of the part, with pain increased on pressure and motion, and extending down to the foot. The leg is flexed upon the thigh; the skin is white, tense, and shining: if suppuration begins, abscesses form and the skin becomes red and fluctuation occurs; the pus may burrow up the thigh or down to the ankle; luxation of the joint may occur from destruction of the bones, notably the tibia. The disease may terminate without any marked impairment of the joint; in false ankylosis from ligamentous union of the diseased bones; in true ankylosis from bony union; or in death from exhaustion or pyæmia.

The *treatment* is similar to that of the other joints, except that amputation at the thigh may become necessary, or excision of the joint.

Inflammation of the Ankle- and Elbow-joints.

Describe inflammation of the ankle-joint.

The conditions here correspond to those of the other joints: swelling, tension of the skin, impaired motion, pain radiating over the foot, suppuration, with caries of the bones or destruction of the joint, with deformity of the foot or ankylosis.

The *treatment* resolves itself into excision of the joint or amputation.

Describe inflammation of the elbow-joint.

The same conditions of swelling, tension, pain, and impaired motion are present. The forearm is flexed upon the arm midway between pronation and supination; the forearm and arm are emaciated, making the tumefaction at the elbow more prominent. After recovery the joint is deformed and ankylosed. Death sometimes occurs.

In the *treatment* amputation or excision of the joint must be considered.

SKIN DISEASES.

Describe erythema papulosum neonatorum.

Erythema papulosum consists of small, dark-red papules on a red base, attended with itching, appearing chiefly on the breast and back, and due to local irritants, as the clothing, etc. It lasts but a few days, fourteen at the longest, and is followed by desquamation.

There are no constitutional *symptoms*. It must be differentiated from scarlatina, which it closely resembles.

The *treatment* comprises removal of the cause—*i. e.* the substitution of soft, unirritating garments—and inunctions.

Describe intertrigo.

Intertrigo, or chafing, affects the groins, nates, buttocks, axillary region, and folds of the integument in fat children. It is due to heat and moisture, diarrhœal discharges, and urine. It varies in degree from simple redness with moisture to a gangrenous condition. In the most common variety the epidermis is destroyed and the cutis exposed.

The *treatment* consists in strict cleanliness, drying the part thoroughly, and dusting with some medicated powder. Lycopodium alone or with zinc oxide is one of the best. Other powders, used alone or in combination, are starch, ac. boracic, impure carbonate of zinc (calamina), calcined magnesia, powdered chalk, etc. If the cause is diarrhœa, this must be corrected before the intertrigo will disappear.

Describe furunculosis.

Single furuncles present the same conditions as in the adult, and require a similar treatment. Frequently children, especially those of tuberculous parents, are attacked by large numbers of small boils, occupying all parts of the body, but especially the head. These spots are very painful, surrounded by a zone of inflammation, and terminate in suppuration, the pus being thick and yellow or sometimes bloody. A core is rarely expelled. The glands in the neighborhood are enlarged and tender. Children with this affection are restless and peevish, lose their appetite, become pale and anæmic, and, if the disease is very extensive or stubborn, will become feverish and take to their beds.

In the *local treatment* the boils should be opened as soon as sup-

puration occurs, after which healing can be hastened by the application of some simple ointment. Where the hairy scalp is attacked, in which case crusts form, matting the hairs together, these crusts can be softened and the tension on the hairs removed by simple ointments or oily mixtures repeatedly applied to the scalp. The *general treatment* calls for anodynes, hypnotics, and tonic remedies.

Describe pemphigus in children.

Pemphigus consists of yellow blebs upon the skin, varying in number and size, most abundant upon the face and trunk, and occurring more frequently in infants than in older children. At first the skin is red; then the bleb forms; this bursts or dries up; a scab remains surrounded by a red areola; when this separates the skin appears normal; no scar results unless diphtheritic inflammation has attacked the part.

The *cause* of the disease is supposed to be contagion.

The *treatment* is local: inunction of the denuded surface with some simple or antiseptic ointment.

Describe scabies.

Scabies, or itch, is a disease of the skin produced by the parasite *acarus scabiei*. The female burrows beneath the skin, where she lays her eggs, which will be seen as a curved, brownish-black line, terminating in a point of inflammation, at which point the insect is located. In recent cases only papules or vesicles will be found where the insect has entered the skin, but has not commenced burrowing. The disease involves all parts of the body, but is most marked upon the hands, buttocks, and abdomen. It is attended with intense itching, but young children, not being able to scratch themselves, have the disease in a milder form than older children, in whom the entire body may be covered, as scratching causes the disease to spread. In severity it may vary from a few isolated papules to extensive ulcers due to the coalescing of the pustules. It is extremely contagious, and sometimes very stubborn, resisting all treatment.

The *treatment* consists in thorough scrubbing of the skin with hot water, soap, and a nail-brush, so as to break open all the vesicles and pustules, and, after drying the surface, a liberal inunction with sulphur ointment. This should be done at night. In the morning the ointment should be washed off with soap and water, *and the child dressed in new or absolutely clean clothes.* The

infected clothing should be baked in a hot oven for at least six hours, when it can be washed in the usual way and worn. It is better, however, to burn it. Other remedies used are—inunctions of balsam of Peru at night and a hot bath in the morning, using the same precautions about the clothes; green soap, zinc-oxide and tar ointments, and sulphur baths. The child's general condition needs improvement with tonics, general diet, etc.

Describe congenital nævi.

Congenital nævi are due to an excessive deposit of coloring matter in the skin, the color varying from yellow to brown or black. They are of irregular shape and all sizes. The affected skin is generally elevated and covered more or less profusely with hair.

They produce no *symptoms*.

The *treatment* consists of the removal of the deformities: this can be accomplished by surgical interference, electrolysis, vaccination, or the application of some caustic.

Describe burns and frost-bites.

Burns in children produce the same results as in adults, except that they are more apt to get up a high grade of fever, and produce more marked nervous phenomena, sometimes causing convulsions.

The *treatment* indicated is soothing applications and protection of the part from the air, simple ointment, lard, linseed oil and lime-water, olive oil, etc., followed by cotton or lint dressings; keep opposing surfaces, as between the fingers and toes, separated; open all blisters, but avoid removing the epidermis; prevent contractions by apparatus. Treat the constitutional symptoms.

Frost-bites in children present chiefly redness, swelling, and itching, or in a more severe form bloody blisters: these conditions are for the most part confined to the feet, and are due to exposure to snow or disregard of cold and wet feet.

The simpler forms are best *treated* by frictions with snow; afterward the parts should be anointed with soothing ointments. In the severer forms, where the blisters break, ulcers result, and should be treated as such with stimulating applications.

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